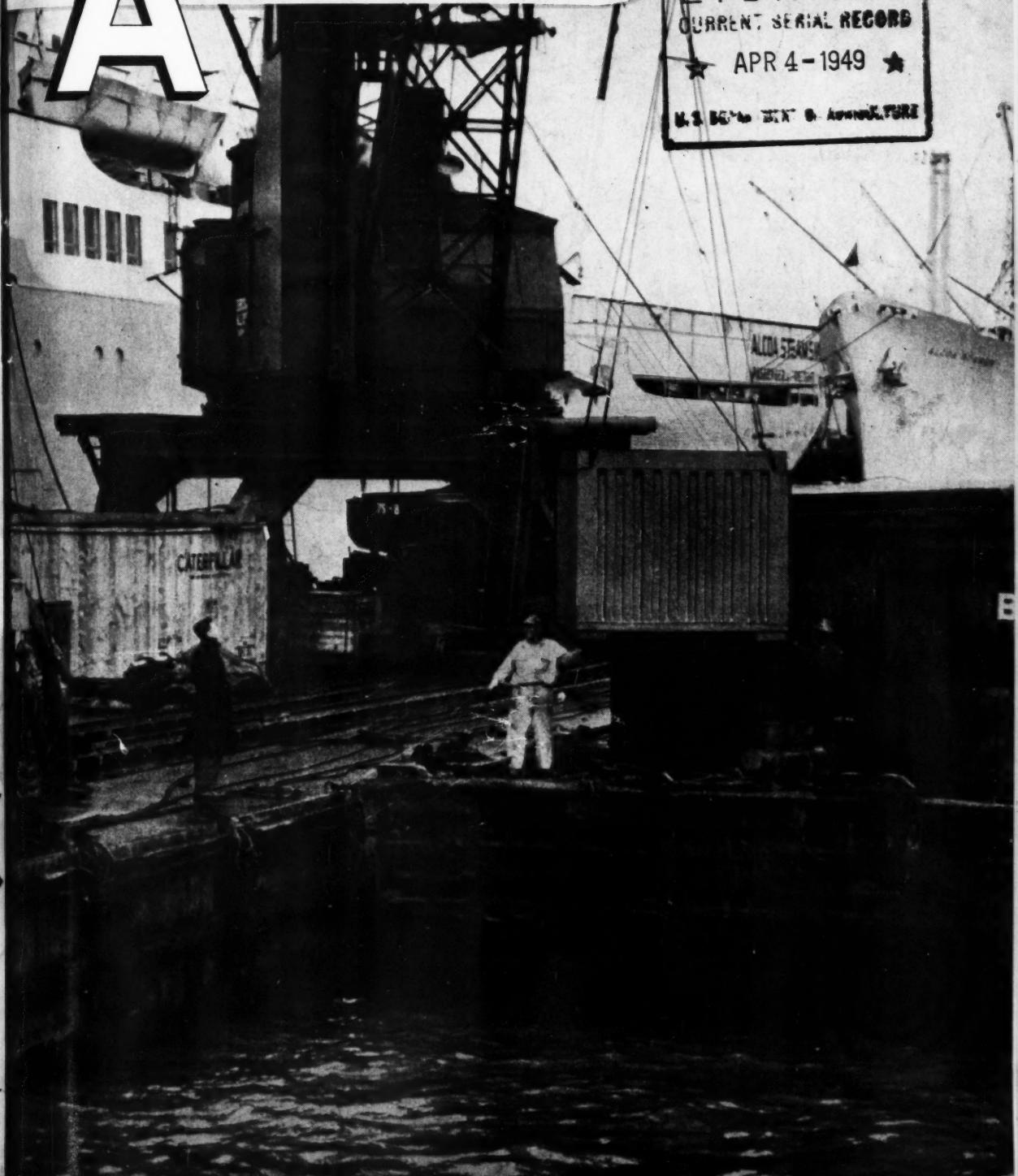
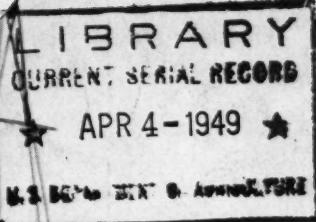


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APRIL, 1949



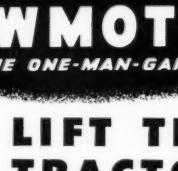
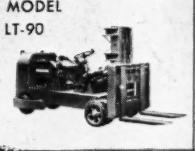
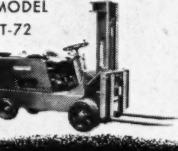
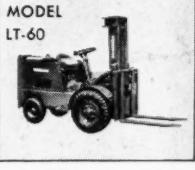
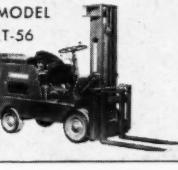
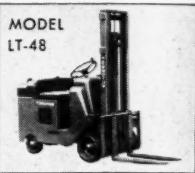
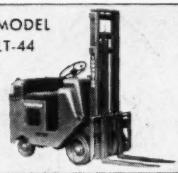
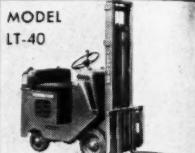
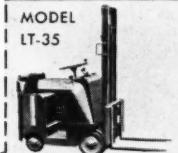
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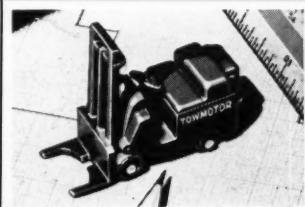


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This month's cover illustrates the integration of inland and ocean shipping functions of distribution, together with packing (as exemplified by a shipping container), handling and land forms of transportation. Movement by water must be highly efficient in order to cope with current costs.

DISTRIBUTION AGE

The Magazine That Integrates All Phases Of Distribution
100 E. 42nd St., New York 17

H. S. WEBSTER, JR.
Publisher and Editor

THEODORE WHITMAN
Managing Editor

GEORGE POST
Assistant Manager

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Consultants: Materials Handling, Matthew W. Potts; Traffic, Henry G. Elwell; Air Cargo, John H. Frederick; Legal, Leo T. Parker; Packing, C. L. Saperstein.

Special Correspondents: Arnold Kruckman, Washington, D. C.; Fred Merish, New York; Randall R. Howard, Chicago; R. Raymond Kay, Los Angeles; H. F. Reves, Detroit.

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Advertising Staff

Central Western Mgr.

A. H. Ringwalt, 360 N. Michigan Ave.,
Chicago 1, Ill. FRanklin 2-0829

Central Representative

H. F. Smurthwaite, 1836 Euclid Ave.,
Cleveland 15, Ohio. Main 6374

Western Representatives

Roy M. McDonald & Co., 564 Market St., San Francisco 4, Cal., Yukon 6-0503; 639 So. Wilton Place, Los Angeles 5, Cal., Drexel 2590; Terminal Sales Bldg., Seattle 1, Wash., Maine 3860.

Special Representative

Duncan P. MacPherson, 700 S. Washington Sq.,
Philadelphia 6, Pa. LOmbard 3-9982.

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April, 1949

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STATEMENT OF POLICY . . . Our policy is based on the premise that distribution embraces all activities incident to the movement of goods in commerce. If distribution is to be made more efficient and economical, we believe business management must consider more than sales, because more than sales are involved. Marketing, while vital, is one phase only of distribution; seven other practical activities not only are necessary but condition marketing costs. Most commodities require handling, packing, transportation, warehousing, financing, insurance, and service and maintenance of one kind or another before, during or after marketing. We regard all of those activities as essential parts of distribution. Hence, the policy of DISTRIBUTION AGE is to give its readers sound ideas and factual information on methods and practices that will help them to improve and simplify their operations and to standardize and reduce their costs in all phases of distribution.

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Dallas-Atlanta	8.00	6.66
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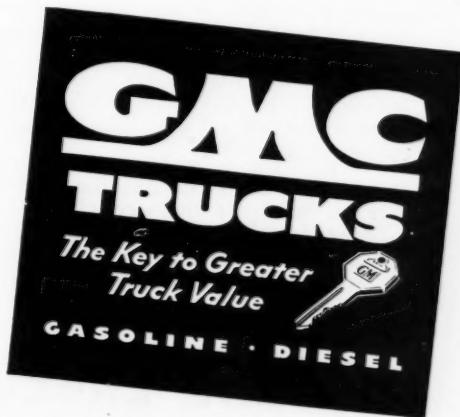
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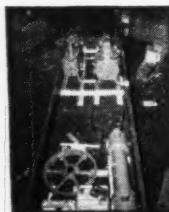
APRIL, 1949

GONDOLAS—It is apparent that gondola supply will tighten up within the next few weeks and that the railroads will have considerable difficulty in meeting requirements for this type of equipment during most of 1949—AAR Car Service Division Report (Jan. 20, 1949).

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At the Chicago Railroad Fair, the Pennsylvania Railroad displayed this panel in one of a series of PRR gondolas equipped with Nailable Steel Flooring.

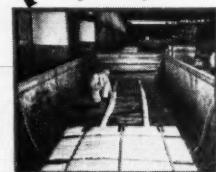


A BLOCKED LOAD—Wood blocking nailed to floor keeps machinery in place in the car. Heretofore this has required a wood floor car.

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← NAILABLE — for hauling finished goods

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Gondola supply tightens up not only because there aren't enough gondolas, but also because most of them can't be used for every kind of open-top freight. *Wood* floor gondolas take blocked loads but suffer severe damage when used for rough and heavy freight . . . and conventional *steel* floor gondolas take rough and heavy freight but can't take blocked loads because they're not nailable.

Many plants and loading areas use more of one kind of car than the other. When cars on hand are the wrong type for loading, wasteful, empty movement between plants and areas is required to get the right cars in the right place.

Gondolas with NAILABLE STEEL FLOORS don't make these wasteful, empty trips because they carry *both* rough freight and finished goods. They take nails easily, hold them tight, and make an excellent surface for blocked and skidded loads. Made of tough, corrosion-resistant N-A-X HIGH-TENSILE steel, they stand up under the roughest magnet and clamshell loading. They're double-duty cars—100 percent efficient.

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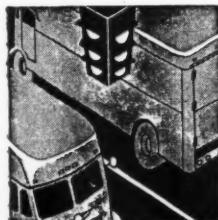
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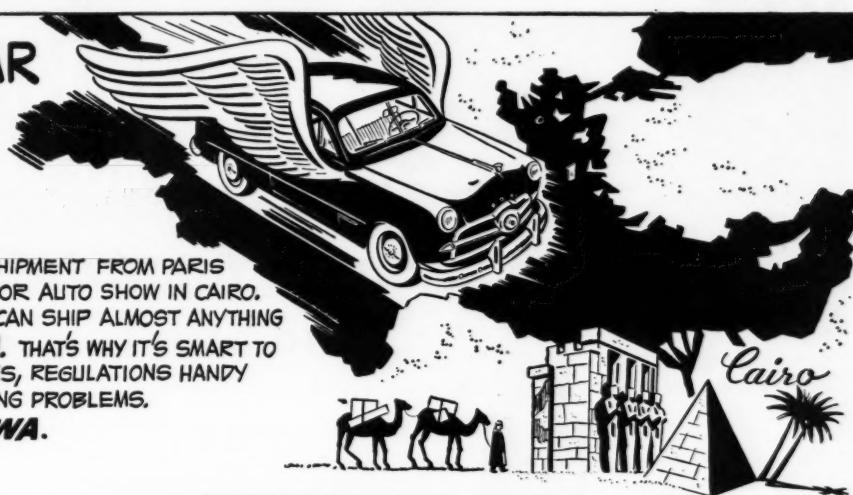
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EDITORIAL COMMENT



Where's the Depression?

As a youngster I took a trip on an ocean steamer, to Europe. Late the first afternoon, I stood on the forward deck watching the prow rise and fall, rise and fall, as the ship floated steadily toward the ever-distant horizon. It wasn't like the city, where you're hemmed in by brick and mortar, and where the bits of sky above are like an afterthought. The horizon is stark and unmarred; it appears to lie just above eye level, and one has the feeling of always pursuing something just a little higher than oneself. There are ups and downs, just like the ship on the waves, but the course is upward and onward . . .

Depression. Depression. We're getting a regular chorus of that nowadays. Let a fellow cut his markup five per cent on a loss leader (often getting it back on another item) and he yells "depression". Some of the newspaper boys are doing the same thing—getting a little sensational—perhaps selling a few more copies. Let there be a little dip—or a good-sized dip—or a BIG dip—in some sections of industry, and there are sure to be people yelling "depression". Some people have 1929 on the brain; they go around studying charts—waiting, hoping for something like a decline. Then they say, "See, history repeats itself. Wha' did I tell yal Depression!"

History doesn't repeat itself. It's always different . . . a little more, a little less. But different. Study today's so-called depression. Compare it with 1929. Did we have government in industry the way we do today? A multi-billion dollar defense program? World-wide commitments? The prospect of a vast investment program in undeveloped countries? How can you have a depression under these circumstances?

I was on a ship, out on the high seas, and many a time I saw the ship drop down the farther side of a big roller, only to find that it had power and buoyancy enough to get up the near side of the next one. She kept on going; the engines kept on going; the crew kept on going. They didn't worry about the waves and the wind; it was old stuff. They had such confidence they paid little attention to the ocean. Their eyes were on the horizon . . .

Take a look, sometime, at a long-term chart of business booms and depressions. Sure there are ups and downs. The dips and the heights do vary. Some are large, some small; many are flat and shallow; others are quick and short. It was because of these differences, and because slumps may follow high prosperity or a period of moderate well-being, that economists have given such names as depression, recession, disinflation and so on to the troughs in the business cycles. In a sense, yes, it is word-slinging. But in a larger sense it is wise, since looking upon all slumps as depressions can be psychologically dangerous.

And here is another thought: history does not repeat itself. At least, not exactly. Then why talk of depression as if we were faced with another 1929? Unless one sees the similarities and the differences in proper perspective, one will be apt to cry "depression" and go wringing

hands in trepidation and anguish. After all, where IS the depression? Certain consumer goods show signs of weakness? Some prices have dropped ever so little? It seems to me that the only depression I have seen has been in the writings of certain well-known columnists . . .

You can't tell, at this early stage, whether we're in for a blow or for a breeze—at least with assurance. The probabilities are that the present slump will turn out to be a lull in business activity. By this summer, definitely by this fall (with big new appropriations coming up) we should be out of the slump.

Unless the unexpected happens. But we oughtn't to go around fearing ghosts because the unexpected may happen. This world is an insecure place at best, and we might as well go around whistling and enjoying it, rather than looking behind us all the time . . . There is the horizon ahead of us, and just above.

We people in the publishing field—and you people in the field of business—have a task, an immediate task to perform. We have got to stop a subtle propaganda wave that is doing us more harm than all the lathering that has ever come out of Moscow. We have got to be realistic, we have got to look facts in the face and stop the alarms of self-appointed crystal ball gazers. These people know little of economics; they want to know less. We and you have our fingers on the pulse of business and know that that pulse beats as steadily as the waves on the prow of our ship, the United States. We and you, who have faith and knowledge, realize that the factors making for economic strength far out-weigh the factors which would weaken us.

We are engaged in a strategical combat upon which the world's fate depends. We cannot afford to weaken, to experience a depression or a recession or even a more than temporary lull. We must go on and up. And we will. It is the wise businessman who, expecting recovery in slow lines, plans for the upward swing that is sure to come once the channels of distribution are cleared of bunch-up commodities. He will begin to rely more on himself and on others like him.

At this point, I'll let you in on a little secret—the secret of Communist power and success. It's a simple secret—psychic income. Convince a man that he has little to lose and a world to gain, and he's willing to attempt anything. Why not? What's he got to lose? But what have we been offering? Psychic outgo . . . telling others not to try that; it's too risky; not to try the other thing; it's likely to fizzle out . . . No wonder the Communists have done so well in Europe and Asia.

When the business community looks to the horizon and forgets the waves, forgets to look at the trough between the waves but sets its eyes on the horizon—just above eye level—then we'll lick psychological propaganda, the weakest point in our armor. Then we'll be looking for what's to come just beyond our vision—with faith and with knowledge.

NEXT MONTH

LETTERS to the *Editor*

DISTRIBUTION AGE for MAY will present: "A New Transportation Policy"—to replace the hodgepodge of regulations and promulgations which Dr. John H. Frederick feels is taking the railroads down the road to government ownership and operation. It is fine, says the author, for Congress to utter noble words about policy; the only trouble is, the policy is being regulated to death. Regulations can't control economic law, and it's economic law which, in the final analysis, turns the wheels or applies the brakes. If this nation is to prosper, the wheels must turn—and keep on turning.

Richard C. Colton is well known as a traffic authority; a review of his book, which appeared a few months ago, may be found in another column. Mr. Colton will discuss The Classification Problem, which he describes as being three-fold: shipping departments often do not know how to describe shipments on bills of lading; the carriers have never made clear the precise bases for a particular rating; and there is general vagueness and misunderstanding as to the justifications for ratings in the proposed Uniform Classification.

Why are shippers turning to trucks? Benjamin Melnitsky thinks it is poor rail service compounded by poor equipment, and he seems to have ample evidence, in the form of data and case histories to prove it. No doubt the railroads are adding new and fine equipment daily; but they have to replace a tremendous mass of obsolete equipment, much of which has been written off but can still roll along. In other words, it is going to take a long time before rail equipment is generally modern—and the newer equipment will age in the meantime.

Another interesting rail story deals with dirty cars, and how the shippers and the railroads are belaboring each other on the grounds that the other has failed to keep cars in clean condition after use. Is this another case of the kettle and the pot?—or is someone really to blame for disreputable and costly equipment? Henry G. Elwell gives his answer to the problem in the May issue of **DISTRIBUTION AGE**.

To the Editor:

This seems to be an appropriate time to start a campaign for the repeal of the three percent tax on transportation of property and the 15 percent tax on all types of passenger fares and pullman accommodations. These taxes, as is well known, were war measures. The higher freight rates and passenger fares get, the greater becomes the tax. Long haul transportation of property and passengers pays more tax than short haul traffic and results in discrimination against long haul traffic.

Numerous bills relating to these taxes are being introduced in Congress—an indication that the peoples' representatives in Washington are becoming conscious of the opposition to the continued collection of such taxes.

If a sufficient number of people can be persuaded to write their Senators and Representatives, including the Hon. Walter F. George, Chairman of the Senate Finance Committee, and the Hon. Robert L. Doughton, Chairman of the House Ways and Means Committee, it may be possible to get these taxes repealed, or if not repealed, then, reduced.

Such effort may appear to be wasted if measured by the President's insistence on an increase of some 4 billion of dollars in taxes. However, he has not, so far, gotten the things he has wanted and newspaper reports show clearly that the Congress is not going to move too fast on a tax program. This should, therefore, present an opportunity to bring the federal transportation tax before our Senators and Congressmen for study. May we, respectfully, suggest that you write your Senators and Congressmen?—General Traffic Manager.

Transportation Costs

The following comments amplify those made in the February issue of **DISTRIBUTION AGE** on the subject of transportation costs.

As in so many things, it all depends upon the point of view. To a representative of a manufacturing concern whose vision is on the disposition of the finished product through the various channels of distribution, any transportation costs which are incurred prior to the point of final manufacture of the finished product are of little importance. Yet it is, as we see it, precisely here that many of the determinants of the final selling price are incorporated into the product. In other words, it may be true that, because the final product's cost will tend to be higher than any of its constituent parts' costs, the transpor-

tation cost will be higher, much higher than the transportation cost on any of the incorporated raw materials or parts. And it is well known that such final transportation costs are only a small part of the market price of the finished product. But the computation of that final transportation cost, as well as the computation of the price, and of other elements making up marketing, depends to no small degree upon the transportation costs incurred prior to final assembly of the product from raw material and semi-finished goods.

To give a simple illustration, Mr. X buys aluminum foil for the manufacture of insulation material. He also buys heavy paper or thin strips of asbestos, as well as glue. He buys the glue locally, but actually it comes from a mill in Ohio. Transportation cost per pound is (we will say) only five cents, or but a small part of the wholesale cost of the glue. He buys the other constituents from other sources, largely wholesalers, who have obtained them from various parts of the country and have conveyed them into storage by the use of trucks. Here again, the transportation costs in each case were perhaps five percent of the wholesale cost to Mr. X. When he prices his final product, the insulation, he does not think in terms of the transportation cost at any one stage or with respect to each constituent of his insulation. He is thinking of his markup—whether 20 percent or 15 percent or whatever. But that percentage is actually being put on every constituent cost, whether he knows it or not.

Now, if his cost of raw and other materials had been, not \$1.55 per pound but \$1.35 per pound, because he found a way to obtain materials which were produced closer to his point of manufacture, his markup would have been (if computed at 20 percent) 27c. instead of 31c. He could then have put himself in a more favorable competitive position; the difference sounds small—very small—but since he sold 100,000 lbs. of insulation a year, it was a difference of \$4,000. Or he could have charged the same price as before and pocketed the difference.

Such sums appear small only by comparison with total labor costs and similar items. But it must be kept in mind that, whereas labor costs typically are fairly rigid and not subject to very violent fluctuations, transportation costs are much more stable and approach the characteristics of "overhead." There isn't much you can do with them, as you tend to see them, and you generally attempt to cut costs by attacking some other cost category, often without success.

Check your truck's heavy winter wear here...



It's been a wearing winter—

Maybe a spring leaf snapped during that severe cold snap. That could cause excessive tire wear, misalignment of axles. Or front-end parts may be sprung; that's bad for steering. Brakes may be worn; that's bad for stopping.

But . . . International's specialized spring service is *good* for what ails trucks.

It's been hard under the hood—

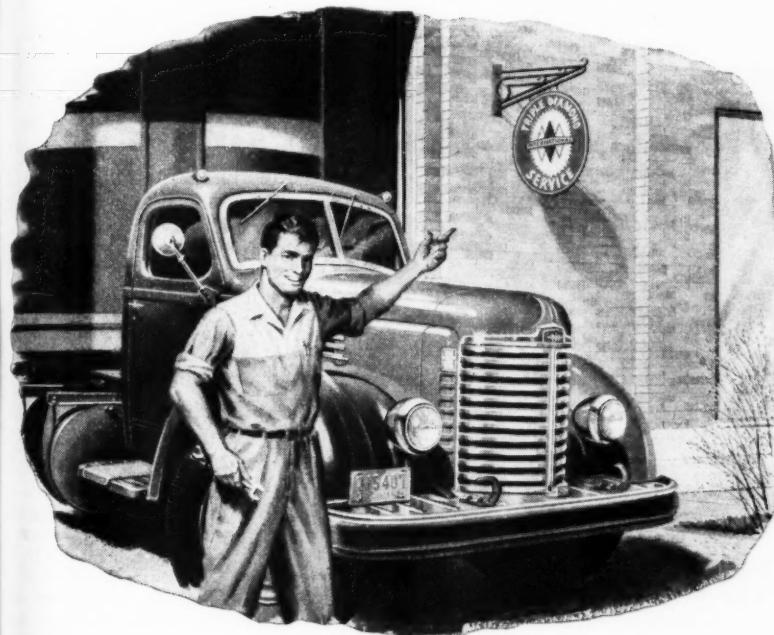
What winter weather took out of your engine, we can put back in!

We change oil, inspect, clean, adjust or replace spark plugs, distributor, voltage regulator, carburetor, valves, battery cables, and wiring.

All work is done by International factory-trained mechanics using special equipment.

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Everywhere a truck needs lubrication, it needs lubrication now. So International service experts cover all chassis points, transmission, universal joints, differential, steering gear, wheel bearings, and any other spot that's too dry for its own good. And believe us, they do the job *right*!

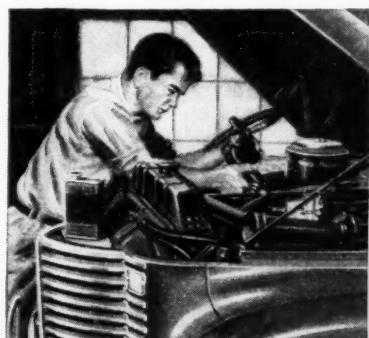


It's overhauling time—for trucks that have been hauling overtime—

4,700 International Dealers, and 170 Company-owned Branches and Service Stations offer you the nation's largest exclusive truck service organization. They're ready with specialized tools and service experience, ready with precision-engi-

nereed parts, ready with factory-rebuilt exchange units . . . ready to keep your trucks rolling profitably into spring and summer.

Have your trucks serviced *now* and save money and trouble later!



It's time to get winter out of your systems—

We'll drain and flush the entire cooling system; refill, adding rust inhibitor, check water pump and cooling connections, check gaskets, hoses, connections and thermostat.

That's how International puts more spring in your truck's systems!

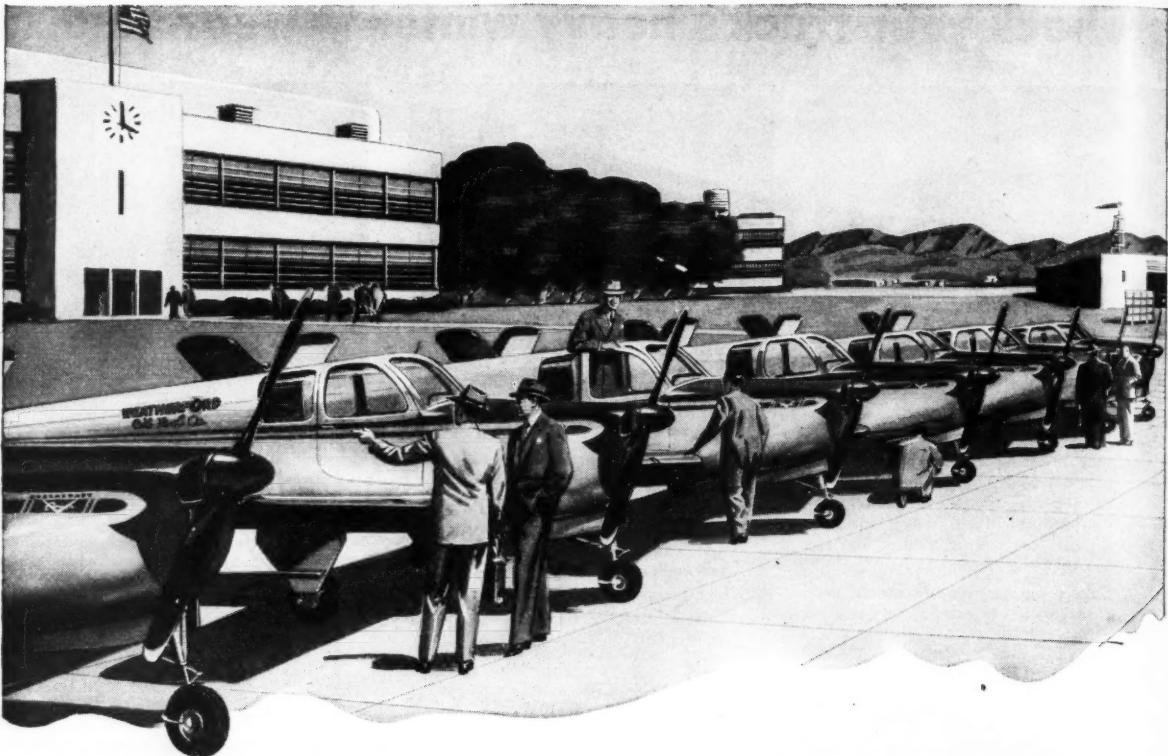
Other International Harvester Products
Farmall Tractors and Machines
Industrial Power . . . Refrigeration



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INTERNATIONAL TRUCKS

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Now we can increase our sales calls by 40% over those we could make by fastest public transportation," says President J. E. Hall, Jr. "If we hear of a potential sale in another state, we have a man there in hours. And customers like fast action when waiting for equipment. Oil rig time is expensive. Now our men, with equipment, get there pronto by Bonanza."



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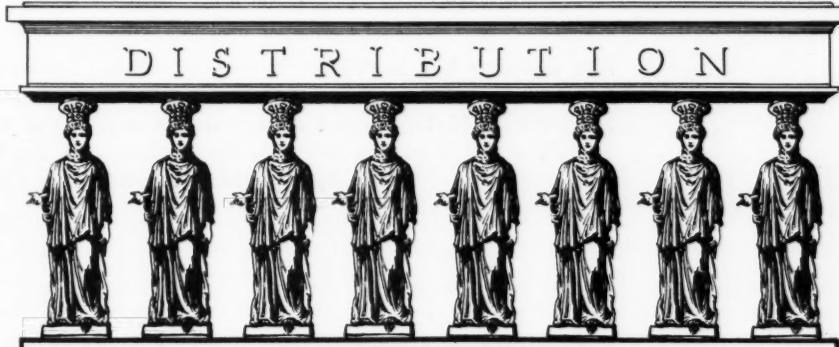
BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Top speed 184 mph
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U. S. Department of Distribution



Why have a "Transportation" Service when all distribution phases are playing an ever larger role in the world of business? The Hoover Commission has set its sights too low. It behooves business to demand that distribution assume its rightful place among the departments of the federal Government.

THE Hoover Commission has proposed that the powers of the Department of Commerce be expanded to take in the direction of air, land and water transportation. It considers a "Transportation Service" preferable to a separate Department of Transportation. This idea, we feel, is inadequate; we feel also that it is not in line with the transportation policy promulgated by Congress: a national transportation policy which furthers the development of every form of transportation, insofar as such form is economically capable of being developed without injury to the national interest.

The Service would be a centralized body, combining the functions now provided by the Coast Guard (Treasury), the ODT, the National Advisory Committee for Aeronautics, the ICC (regulation of railroad consolidation, safety functions), the Maritime Commission and the CAB, etc., etc. On the surface it would appear that regulatory functions, which would, if not properly handled, give the Service power to limit or increase the development of various forms of transportation, are studiously omitted from the plan. Apparently it was conceived that in a body such as this, those members more favorable to, say, railroad development (members

By THEODORE WHITMAN
Managing Editor

accustomed to looking with a benign eye on railroad's control of other forms of transportation), might gain considerable influence. This would raise the question whether the national transportation policy would thus be furthered. The danger would exist despite the present limitations, since it would still remain within the province of Congress to further amend the status of the proposed Service, possibly in the direction of greater regulation. In other words, centralization of secondary functions might in time become centralization of primary functions.

There is another consideration. Since the danger of this or that form of transportation getting too much influence and power would exist in a transportation body, would it not further national policy and broaden the functions of a centralized body to include in it other forms of distribution? Under such circumstances, there would be little possibility of any phase of distribution gaining too great a position of power and influence.

For these reasons, it is suggested that there be created a Department

of Distribution. Certainly, such a department should not be subordinated (as it would be if it were a "service") to another department. It should be kept in mind that the Department of Commerce deals with trade and industry. In view of the fact that industry spends more on distribution than on production, a body representing distribution should not be subordinated to a trade body, but should stand on its own feet. It would further the drive by industry toward new cost procedures to bring out the role played by distribution in the pricing of products and in the level of profits, for sale both in the United States and abroad. With government statistics available, little purpose is served by lumping cost data to veil the cost role played by distribution. It would serve to bring out, contrary to data published by the Department of Commerce suggesting that transportation costs are minor (just a few percent), that such costs are a serious concern since they start to mount up at the extraction of raw material, continue mounting all the way through processing to final distribution to consumer. The same goes for materials handling and other distribution services.

(Continued on page 45)

Why Steer Clear

Pier delivery is a headache to most truckers. Rate confusion, high labor costs, waiting time, congestion—these are all factors teaching the truckers that an ounce of prevention is worth a pound of cure. There's a lot that the carriers themselves can do to make pier delivery a profitable business.

ALMOST all motor carriers in a position to deliver to and from ports have done a good deal of complaining. "I simply can't afford to make pier deliveries," is the usual remark. They go on to say that deliveries cost money for excessive waiting time, tied-up equipment and exorbitant unloading charges. On top of this, the crazy-quilt of rates is enough to discourage a saint. No wonder pier business is poison to many a hauler.

What can be done about this situation? Complaining doesn't help; not when you deal with steamship companies, stevedore bosses—and with carriers themselves. Which brings up the point that before motor carriers disgusted with port business start blaming anyone, they ought to look in the mirror.

To put it more politely, perhaps a large part of the difficulty lies with the carriers themselves. Consequently, let's start our analysis of the situation involving export and intercoastal freight by studying motor carrier rates, since it is here that the carriers have the biggest say.

What is said here on export tariffs applies to E.M.F. Tariff No. 24D and 20E, with which we happen to be familiar. This doesn't mean that the above are exceptionally complex or were chosen to help prove a point; others are just as complex and contain just as many pitfalls. Perhaps the selected ones are useful for illustration, since they were compiled in accordance with the justly famous Ex parte MC-22.

The title page says "Class and

Commodity Rates." It should say "innumerable" as well. Tariff No. 24D alone has five class rate scales and (as this article is written) 997 commodity classifications. By publishing time the latter ought to be well over a thousand.

Suppose we take Abrasives as a case in point. Items 340-350; to or from New York; from or to five cities in Massachusetts and one in Rhode Island. With four weight breaks, you have 24 published rates. In addition to this, you have four more published rates to cover shipment from two other Massachusetts cities to piers in Hoboken, Jersey City, New York and Weehawken. These rates do not cover shipments in the reverse direction. Add to this one stray dog of 20,000-lb. minimums from New York and Jersey City piers to one city in Massachusetts, and you have a total of 29 published commodity rates on *one item*.

Not all carriers certificated to haul this commodity between the points named in the tariff are willing to abide by the above rates without modification. The commodity section is liberally sprinkled with notes of various carriers who are not willing to accept the traffic (or will accept it locally only) without specifying certain weight limitations. In addition, there are nine rules—in fine print



of Piers . . . ?

By ROBERT F. ODELL

—on the joint application of the tariff; there is Rule 1 Section J, which lists the qualifications or limitations which concern the application of rates in the tariff for account of named carriers; plus non-application of rates columns.

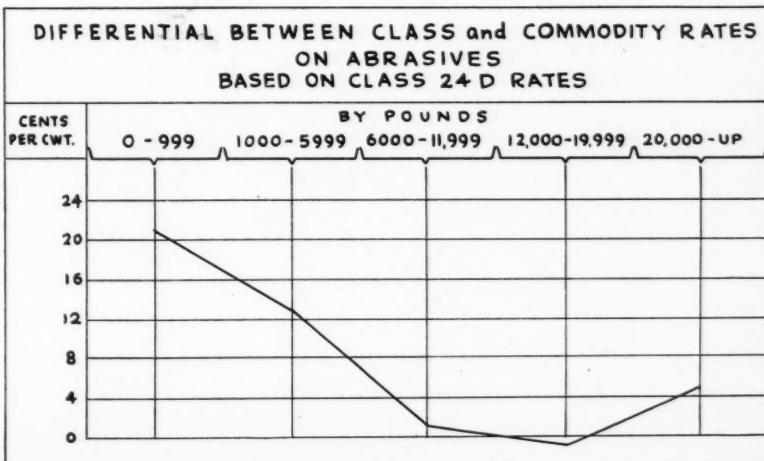
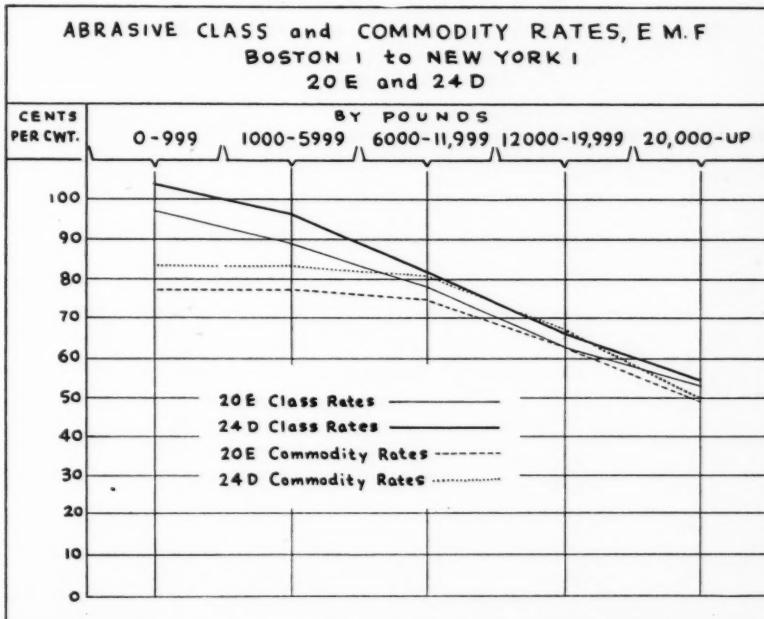
Suppose you're a shipper, and you want to determine what specific rate (out of all this welter of rates) will give you your proper commodity rate. By the time you figure it out (if you ever do), it will cost you enough to raise the commodity rate two cents a pound. Most likely you'll call your regular carrier and hope for the best. Of course, nine times out of ten he won't know the proper rate himself unless he has filed an applicable rate.

The above illustration is purely and simply on the basis of commodity rates. But it is not quite so simple. It's a long haul in the MC-22 area and the story should be very much in favor of commodity rates over class rates. This should be true all along the line. But what do we find? On a shipment up to 1,000 lbs. there is a maximum saving of 21c. per cwt. (see Table). Oops, sorry, forgot one point; there is a weight break point at about 920 lbs. Therefore, up to 920 lbs. you can effect a maximum saving of \$1.93, and this is for 920 lbs. only.

At this point, the question may be raised whether carriers are going to gain any business by such a rate reduction. After all, how many 920-lb. shipments of abrasives are there that such a piddling reduction is going to make for a greater volume of business? If we progress to higher weights, there is a constantly changing pattern

(Continued on page 48)

CLASS and COMMODITY RATES, E.M.F. 20E and 24D						
ABRASIVE		BOSTON I to NEW YORK I				
		0-999	1000-5999	6000-11999	12000-19999	20000-UP
20E Class Scale 243	97	89	78	63	53	
20E Commodity Item 475	77	77	75	63	49	
24D Class Scale 543	104	96	82	66	54 1/2	
24D Commodity Item 340	83	83	81	67	50	
Differential 24D	21	13	1	-1	4 1/2	





A small war vessel is passing a heavy tow of oil and sulphur bound for upstream industrial centers.

Photos, Mississippi River Commission

BRASS on the Mississippi

The Army isn't all pomp and circumstance. It is public relations and being genteel host to Delta people representing local and state interests. It is trade minded: putting up levees and deepening channels. It is "mine host" to your correspondent, and is demonstrating how "Ol' Man River" is being made more youthful . . .

By ARNOLD KRUCKMAN
Washington Correspondent

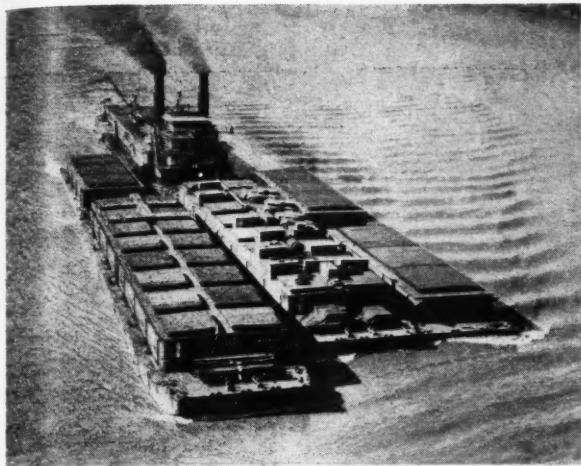
OUR correspondent is one of the few persons living who travelled on the old Mississippi in a boat in which Mark Twain himself "sounded the lead." This was one of the reasons which encouraged me to make a tour of the Mississippi which the Army had made possible. Your correspondent can now give an exclusive report to DISTRIBUTION AGE readers on the happenings in the lower Mississippi River valley. It all grew out of a suggestion that I see for myself what is now going on around the river. This suggestion was implemented by an invitation from Brig. Gen. Miles Reber, Engineer Corps, one of the best known legislative specialists in Washington; and was further confirmed by the former Chief of Engineers, Lt. Gen. Raymond A. Wheeler.

The survey started at Memphis, Tenn., and included a complete aerial sweep over the area; an automobile trip to Helena, Ark.; and a jaunt by auto and on foot to Elaine, Ark., where the Corps of Engineers were making articulated concrete revetment mattresses that are slipped over the banks of the river to hold back the treacherous soil above water and far below the surface. At Elaine, once the scene of bloody race riots, an Army speed boat took me several miles out on the river to board the Corps of Engineers stern-wheel steamboat, the Mississippi, largest and finest craft of its kind left on the river. The boat was pushing two barges down to Vicksburg, Miss. They were laden with supplies for the Corps of Engineers maintenance plant at that city.

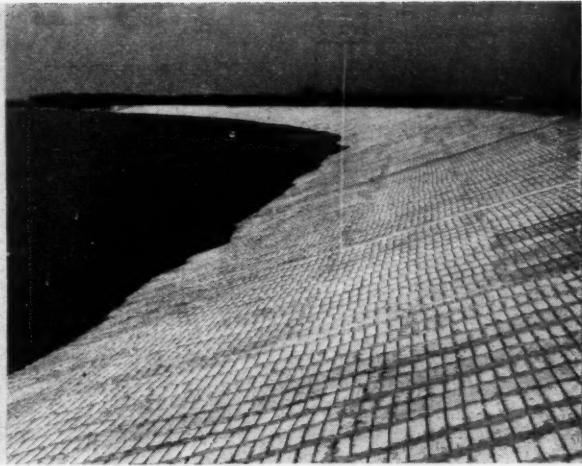
The boat criss-crossed from one shore light to another. I saw fog swiftly envelop the boat; felt the boat gently go aground; and slept through what was left of the night while the crew awaited the dawn, at which time they could take the big boat off the sandbar; and finally was up to see the Mississippi join the procession of boats and barges which had been held immobile on the river until the sun burned away the paralyzing fog. All of this is intimately related to the problems of distribution, to which the traffic on the Mississippi makes bountiful contribution.

The river is not crowded with barges and steamboats in the sense that we conceive of a mass of shipping in New York Bay; but from the point of view of people who

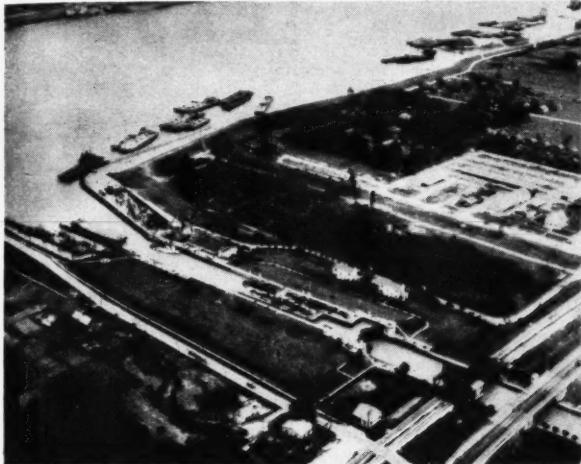
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Typical view of a large tow downbound from Cairo.



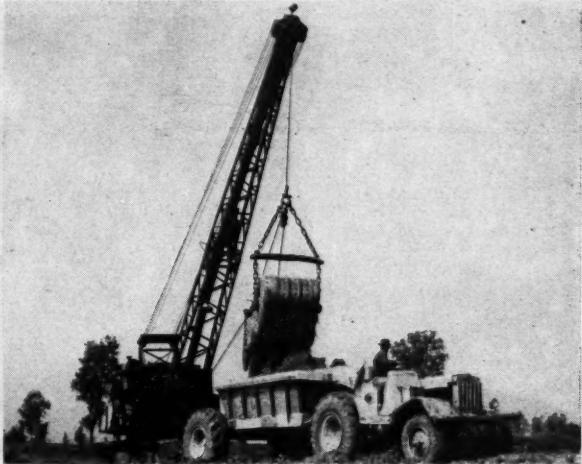
Bank protection. View shows completed revetment of the articulated concrete type along a stretch of the Mississippi River in Tennessee.



Aerial view showing tows in Harvey Lock, with other tows lined up along Mississippi River levee awaiting their turn to enter the lock.

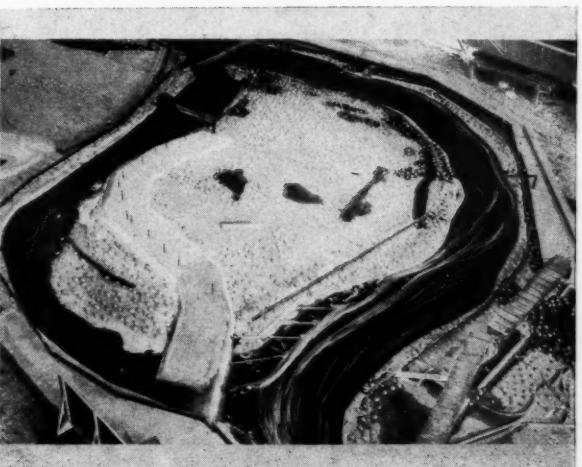
The Snagboat "Tom Stallings" on White River at Zig Zag Bend. View shows workmen removing branches from snag prior to raising trunk and roots.

Photo, Department of the Army, Corps of Engineers



Construction of levees by small dragline machine and truck loading dirt for construction of levees for flood protection.

Model study of Memphis Harbor, Tennessee, with the improvement plan installed. Tennessee Chute has been cut off by a closure dam, and a 2,000-ft. industrial fill has been constructed on President's Island.

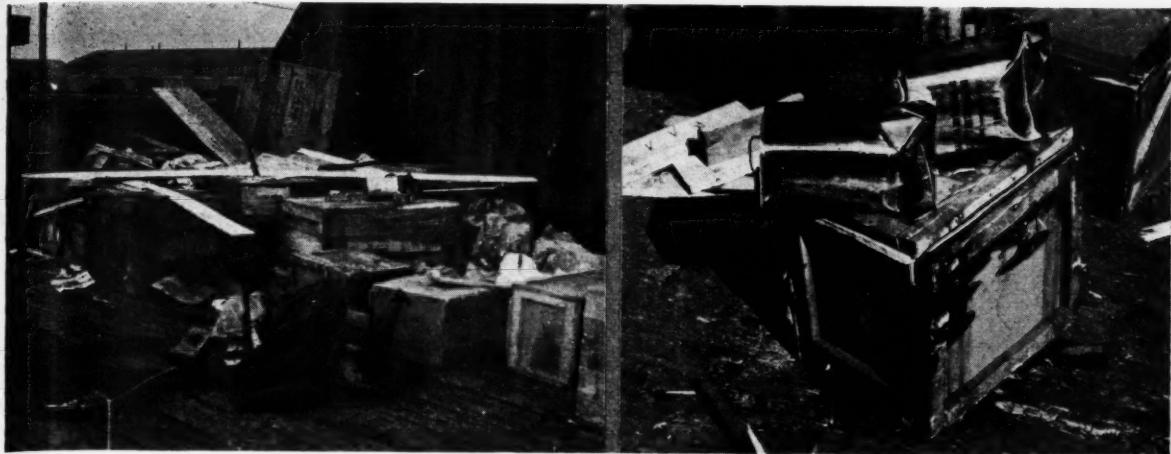




Export

EARLY in February an unusual mass meeting took place on the floor of the New York Maritime Exchange. Some 600 representatives of shippers, consignees, manufacturers, packaging and packing men, freight brokers, government agencies, commercial trade agencies, steamship companies and marine insurance interests met in the interest of export trade.

Neither sailing schedules nor conference rates were discussed. The subject of the meeting was the prevention of losses on export shipments by water, particularly losses due to damage and pilferage. However, this was far from being just another confab on better packing and crating methods. It was the final step in a long, determined campaign to create the means of mass attack upon the appalling losses which occur to U. S. goods in export shipment, particularly upon their arrival at foreign ports. This meeting set in motion the machinery to create by the end of



Damage Losses

The new inter-industry packing project, backed by shippers, shipping companies and others, looks good. But it'll take more than committee meetings to sizably reduce the \$750,000,000 annual packing loss which is jeopardizing American export shipping volume.

By CHARLES L. SAPERSTEIN *Packaging Consultant*

April an organization which will permit shippers weak in preparation know-how, to draw upon the experience of the more successful shippers.

Men more familiar with domestic shipping procedures than with export, may wonder why the task is so labored and the problem one requiring such effort. In domestic shipping there are ICC regulations and Freight Container Rules which arbitrarily establish minimum standards. Also, with certain commodities, there are tariff schedules which make it worthwhile for shippers to use approved containers.

In export shipping the problem of regulating the external preparation of goods is far more complex. Here are a few of the considerations:

a. Proper protection for goods going to one destination may not be proper protection for goods going to another. Climatic conditions and moisture exposure vary from port to port.

b. Terminology, labor, and

A task committee, so-called, has been appointed by James A. Farrell, Jr., president of the Maritime Association of the Port of New York. This committee, which has been instructed to report to Mr. Farrell before April 30, will recommend a course of action for the improvement of packaging in export. Such standards as emerge from voluntary cooperation among shippers, carriers and underwriters will probably be incorporated into the tariffs of the various trade conferences. Insurance rates may be adjusted to give force to such standards.

Presence of Department of Commerce representatives in the background gives added impetus to the committee's activities. If industry fails to put its house in order, Commerce officials may step into the picture and establish mandatory export packaging regulations. The Maritime Association of the Port of New York has been requested to promulgate the recommendations proposed by the committee, with a view toward having them adopted on the most practical basis possible. The completed plan, and how it will affect ocean marine shipping, will be covered in later issues of *Distribution Age*.

method of handling differ in different parts of the world.

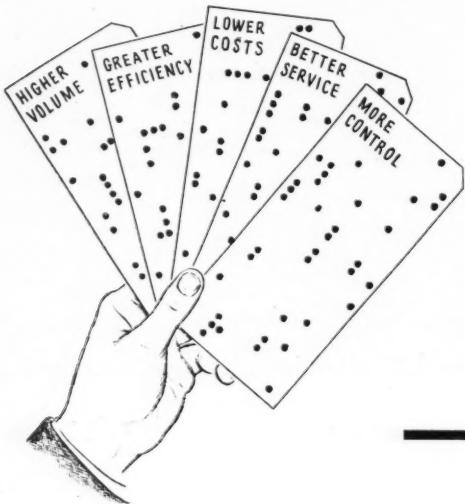
c. Where competition with other countries is close, greater expenditure on the shipping unit may keep U. S. shippers out of the market.

d. Goods in water shipment are subjected to greater stress and strain, side pressure and higher stacking, than in domestic movement. It is still an unsettled mat-

ter how much damage results from faulty preparation and how much is due to carelessness in loading, stowing and discharging—in other words, whose house must be set in order.

e. One of the greatest contributing factors to loss claims in water shipment is pilferage both in our own ports and abroad. An export

(Continued on page 30)



Trimming Ocean

Gone are the days when the ship's captain was both accountant and officer. Today, ocean shipping is so widespread and so detailed that companies must install the most modern cost control and analysis systems to keep afloat.

PARTLY as a result of advances in management and accounting procedures, but perhaps even more as a result of the demands imposed by an intensive drive for more business and reduced costs, steamship companies have improved systems and procedures. Thus, they are able to provide better, faster service at lower cost. Keeping tabs on costs is no easy job when manpower and equipment—indeed, the entire operation—is moving from one side of the globe to the other.

Steamship lines break down operations into three major categories: sales, terminal operations (cargo accumulation) and cargo handling—ship operation. Accounting and control functions also are broken down into categories. In fact, development of better systems of performing the work falling within certain of these categories, has been largely responsible for the fact that the steamship companies have been able to provide superior service at lower cost.

The following facts make it clear why the water carriers have had to make such a determined effort to cut costs wherever possible. Over the past decade operating expenses have risen to this extent: crew wages per man per day have gone up 216 percent; fuel costs, 176 percent; subsistence costs, 166 percent; and stevedoring, 158 per-

cent. These costs represent the great part of operating expense. The question was this: How could revenue-expense ratios be improved? Not by reducing manpower costs: labor is highly organized, with manpower costs almost completely in the hands of unions. Not through rate changes: rates are fairly well fixed, either by government regulation or by competition. Not by improving ship design: ship design is already far ahead of port design. Actually, about the only areas open to cost cutting measures were handling and claims:

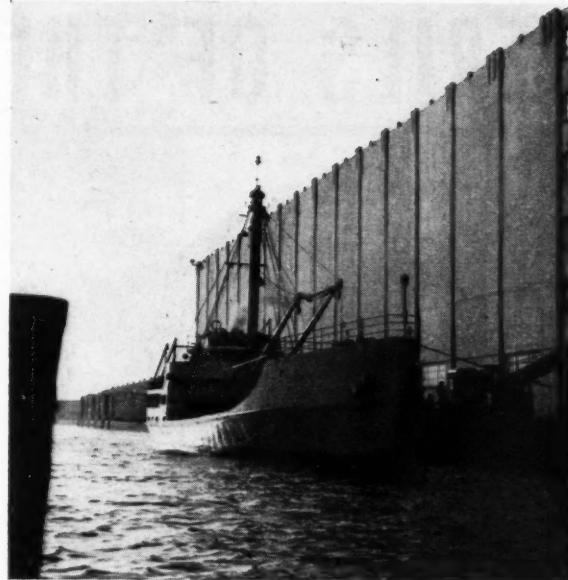
Claim prevention, or "protection" is intimately bound up with other steamship company cost factors. A steamship company, to carry through a claims prevention plan, would require detailed cost figures. Such figures would have to come in fast—would have to come in from ports thousands of miles away. To do the job progressive carriers have installed up-to-the-minute cost control systems. Today the system works like this: The company's central office gets a report that distributor X's packages, on a wharf half-way round the globe, are in poor condition. The office demands statistics, details. Almost immediately the reports flock in. Statistics are correlated and compiled, and before serious damage can result, management has the dope it needs to get the situation in hand. This one

looks easy—just pass the word on to the shipper that his cartons aren't holding up as well as the pre-war ones, and let him remedy the situation. But it wasn't as easy as it looked. Distributor X got the word and bounced back at the steamship company with this reply: "I know the packaging is poor, but it saves us a lot of money. It's what our competitor uses, and the railroads don't complain. So . . ." So the steamship company took another look at the facts and figures, and came up with handling and stowing changes that did the trick. Thus, while engaging in a program to hold claims down, the company was able to make vital, cost-cutting changes in handling and stowing.

Detailed cost analysis is essential in that it brings to management's attention expense factors of every conceivable nature, including those of lost time. Today cost analysis is *vital* to the steamship line that wants to stay in business. To the distributor, cost analysis on the part of the steamship company means lower rates and improved service. The element of time is important. Shipping today is a vast and complex operation which has culminated a transition from the era when the ship's master was all that the word "master" implied. He was also bookkeeper, business agent, courier, banker and broker.

Transport Costs

By LEWIS T. BOLGER



Picture the conductor of a transcontinental freight train stopping off at Buffalo to sign up a carload of tools or toys. Picture him shopping around town for supplies to feed and clothe the train crew, or paying off a local trucker for bringing a dozen crates of machinery to the station, or arranging with the local dispatcher to clear the train along the next 200 miles of its journey. He'd be a pretty busy fellow, but his job would still be a snap next to that of the old-time master of a ship.

As communications, banking and management facilities improved, the vessel operators were able to relieve the master of much business management detail. Systems were set up whereby most business was transacted through branch offices and agents in the various ports of call.

There was no complaint about the efficiency of this method of handling the general business and accounting of shipping, except that it meant duplication of paper work. Each port branch or agent operated as a separate business (complete with bookkeeping, banking, and allied functions) and had to make out complete reports and statements for another set of accounting control operations at the home office.

In common with other businessmen the owners and operators of

shipping lines have, in recent years, become acutely conscious of the need for cost analysis, particularly *operating cost* analysis through executive study of critical figures. To be of greatest value, these figures had to be served up piping hot.

Looking in on a typical management roundtable, we find executives going over complete cost figures on two or more voyages just completed. Through punched-card procedures, such lines as American Hawaiian in New York, Lykes Brothers in New Orleans, and the American President Lines in San Francisco, have complete, up-to-the-minute detail on every item of expense and time involved in their operations.

Comparison of two voyages with comparable cargo, route length and vessels may show, for instance, a handling cost differential of 50c. per ton. The first thing to determine is whether, for the higher-cost voyage, there are factors which might have been controlled. Was the loss in ship operation, or was it in cargo loading or unloading? Why did the stevedoring gang at Hatch 5 cost so much per ton per gang hour while other gangs averaged 20 percent less? Was there adequate study of the stowage list and charts before the vessel arrived at such and such port?

Treasurer Harry Coyle of Amer-

ican Hawaiian Lines puts the cost study program on this basis:

"We need statistics—all we can get of them—at one central point and at the earliest possible moment to bring out the weakness in operations. Without such full detail it is very possible for a capable, experienced terminal or wharf supervisor to go on making errors that just wouldn't show up unless we had detailed data on comparable operations at every other terminal or wharf."

It has been through better cost finding and cost analysis that the steamship lines have made the improvements and direct savings that have gone such a long way toward offsetting pyramiding labor costs. Ship design itself has been predicated on the detailed knowledge made available to management. Shipping men were able to see how much of the expense dollar is in loading and unloading costs.

On the basis of this type of information, for instance, a leading company is concentrating on its new C4's. These speedy, more than 13,000-ton, cargo vessels are built to take more cargo, but the real emphasis is on loading and unloading at lower cost per ton carried. To this end, and because costs are figured on the tons-per-gang-per-hatch basis, the C4's are designed to accommodate a dozen stevedor-

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PERILS OF THE SEA

By HENRY G. ELWELL
Traffic Consultant

Form 7505-Y (Rev. Nov. 1948)		U. S. DEPARTMENT OF COMMERCE	
EXPORT CONTROL		BUREAU OF THE CENSUS—OFFICE OF INTERNATIONAL TRADE	
FOREIGN COMMERCE		TRADE INFORMATION BUREAU	
GENERAL EXPORT REGULATIONS		See Instructions on Reverse Side	
SHIPPER'S EXPORT DECLARATION			
OF SHIPMENTS TO FOREIGN COUNTRIES OR NONCONTIGUOUS TERRITORIES OF THE UNITED STATES			
READ CAREFULLY THE INSTRUCTIONS ON BACK TO AVOID DELAYS AT SHIPMENT POINT.			
CANCELLATION OF THIS FORM IS REQUIRED WHEN THE EXPIRATION DATE OF THE EXPORT LICENSE REFERRED TO HEREIN HAS BEEN REACHED. THIS FORM IS NOT VALID BEYOND THAT DATE.			
DECLARATIONS SHOULD BE TYPEWRITTEN OR PREPARED IN INK; INDELIBLE PENCIL IS NOT PERMISSIBLE.			
Do Not Use This Area		District	Port
1. EXPORTING CARRIER (if vessel, give name, flag and pier number)		Country (For customs use only)	
2. FROM (U. S. Port of Export)			
3. EXPORTER (Principal or seller—licensee)		ADDRESS (Number, street, place, State)	
4. AGENT OF EXPORTER (Forwarding agent)		ADDRESS (Number, street, place, State)	
5. PURCHASER OR ULTIMATE CONSIGNEE		ADDRESS (Place, country)	
6. INTERMEDIATE CONSIGNEE		ADDRESS (Place, country)	
7. FOREIGN PORT OF IMPORTING (For vessel and cargo)		8. PLACE AND COUNTRY (For customs use only)	
FILE NO. (This Space for Use of Customs)			

Water risks are not only those which may befall a ship in storm or fire but also to the shipper, who is unaware of the many legal pitfalls which await him . . . unless he is thoroughly schooled in documents and the importance of the written agreement.

"CHARTER parties, bills of lading, marine risks, and damages to goods in shipping, bring about complex problems for shippers and the courts," said Jack McCormack, free-lance traffic manager, to his companion Harry Cooper.

"True," Cooper replied, "and along those lines I remember that in one of our talks you stressed the need for marine insurance on shipments forwarded via water-borne carriers. (See DISTRIBUTION AGE, April, 1947, p. 31). It was then I realized the necessity of obtaining general average insurance protection."

"It is vital that general average coverage be secured," McCormack added. "Yet, many circumstances can arise. To avoid possible losses, a shipper would do well to procure all necessary insurance."

"What is 'all necessary insurance?'" challenged Cooper. "Do you mean as much insurance as possible? How much would it cost? And, by the way, who pays the insurance, the shipper or the consignee? Furthermore, how is the ordinary shipper to know what to do in order to be properly protected?"

Author's Note: Names of persons and company are fictitious.

"'All necessary insurance' would depend on a given circumstance," McCormack advised. "It should be selected to cover the risk, depending on the type of commodity and its intended use. As I already mentioned, all shipments ought to be insured for 'general average.' 'General average' arises from a voluntary act to save a ship and/or its cargo. A shipper or consignee, if not covered by 'general average,' might have to pay out a sum of money greater than the value of his goods. Then, 'particular average' should be considered in relation to the type of goods. 'Particular average' is the result of an accident. It is usually included when obtaining marine insurance. These two, 'general' and 'particular average,' are the basis of marine risks beyond a steamship company's direct liability.

In times of war it is advisable to take out war-risk insurance. Also, the policy should cover the goods from warehouse to warehouse. The total of the amount of insurance coverage should include invoice value of the commodity at origin, inland freight costs and costs of transportation to ship, ocean freight and charges, plus 10 percent of the total just described. This is a custom of the trade

designed to cover additional unforeseen costs. As to the total insurance cost on an individual consignment, that would depend on all the risks of the specific venture. The payment of the insurance premium, or the taking out of insurance, would be by either the shipper or the consignee, as set forth in the terms of sale and purchase. I might add that the general level of marine insurance rates has not, on the whole, changed over the past years with the exception, perhaps, of the war period. One thing is certain, a shipper or consignee would be foolish not to obtain marine insurance on water-borne traffic, whether or not the rate level has advanced.

As to the final part of your question, my advice is that a shipper or consignee select a reliable marine insurance broker for guidance. Provide him with full information, and accept his advice on each specific transaction. Except where the shipper or consignee fully understands all ramifications of marine insurance, it would be risky for him to attempt to handle the insurance phase without the assistance of a broker."

"Seems to be a good suggestion," Cooper admitted. "But what about



charter parties, marine risks, etc., to which you referred? And just what is a charter party anyway?"

"It's a legal record used in the field of waterborne transporting," explained McCormack. "A charter party is drawn up between two parties of interest for the leasing of a vessel or its cargo space. It should be done only by qualified, experienced persons. Sometimes, though, this requirement is overlooked and there is trouble. In the first place, a ship charter, prepared by owner's agent, must be construed *contra proferentem*.* Typed addendum to a printed charter, prepared after negotiation *ad hoc*,** cannot be ignored as a con-

stituent part.¹ Once a charter party is executed by the contracting parties its terms govern. For instance, a bill of lading operating as a receipt for goods and as a document of title, does not have the effect of varying the contract, as evidenced by the charter party, in that a ship's master is without authority to change or modify the charter by a bill of lading."²

"The relationship between a bill of lading and a charter party is still not quite clear to me," Cooper complained.

"A charter party is a document, or contract, drawn up between the owner of a vessel and a shipper, actually a lease for the ship or part of it," said McCormack. "Originally, when a charter party

was prepared it was torn into two parts, one being retained by the ship's owner and the other by the shipper. The term 'party' is derived from the French word 'partie,' which implies 'to divide.' You will thus note that there is no direct relationship between a charter party and a bill of lading. The latter is both a receipt for goods and a contract of carriage ordinarily applying from ship's tackle—delivery to ship, discharge from ship. There is another document known as a 'dock receipt.' This is a receipt for goods acknowledging acceptance by the carrier prior to loading aboard ship for transportation. The dock receipt shows that goods are in possession of the steamship company, but the liability, expressed or implied, is not as binding as provided in the terms of the bill of lading.

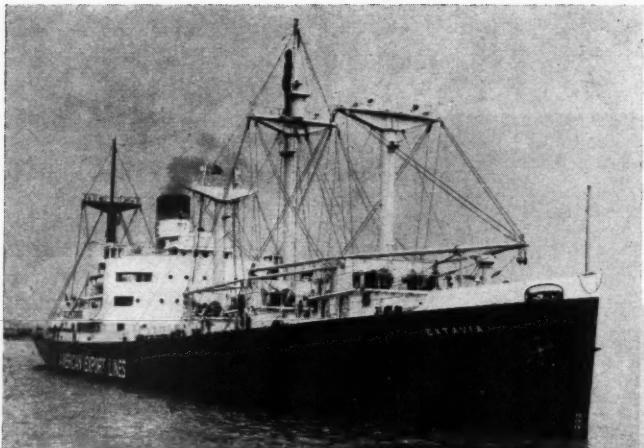
"Getting back to the charter party," McCormack continued. "If a company leases a vessel, or a part of it, a charter party is drawn up. The understanding of the two parties to the document are set forth therein. The company leasing the ship may use it to carry only its own commodities, or it may also transport the property of others. In general, a company finds it less costly to charter a ship or ships when it has a large volume of bulk freight to move. For instance, copper smelters in the United States often charter ships to carry their ore from South America, etc., to this country. Shipping the ore via regular steamship lines would be too expensive. As to the cost where chartered vessels are used, that all depends on the market quotations and on the volume of tonnage to be transported. On the other hand, steamship companies frequently charter ships from other owners of vessels."

"Am I to understand that a charter party is required whenever a shipper uses the services of a waterborne carrier in forwarding commodities?" asked Cooper.

"Of course not," McCormack declared. "A charter party is more in the nature of a lease. A common

(Continued on page 58)

* Against the party who proffers the thing.
** "Special, or for this case alone."



THE SEA-AIR CONTROVERSY

The CAB, up to now, has stood pat on its refusal to permit shipping companies to engage in air transportation. The factor which will be most instrumental in the future of this policy is this: what will most benefit the future of air transportation?

By DR. JOHN H. FREDERICK *University of Maryland*

FOR years now the CAB and the American-flag ship operators have been waging a controversy over whether water carriers have the right, according to the Civil Aeronautics Act, to engage in air transportation. The CAB, backed by the courts, says no. The operators say yes. Restrictions, apparently, have only served to whet the operators' appetite, for today they are trying harder than ever to go into the air carrier business.

Section 408 of the Civil Aeronautics Act of 1938 forbids the control of an air carrier by outside enterprises unless the CAB finds the acquisition to be in the public interest. Subsection b, section 408, imposes a special restriction in the case of acquisition of an air car-

rier by a surface carrier. It provides that if the applicant for approval is a "carrier other than an air carrier," the Board is forbidden to approve the acquisition unless it finds that such acquisition "will promote the public interest by enabling such carrier other than an air carrier to use aircraft to public advantage in its operation"—that is, surface operation—"and will not restrain competition." It has been the CAB's interpretation of this portion of the act which has kept the ship operators out of the air. None of the operators have been able to show to the satisfaction of the CAB that in order to operate successfully as a steamship company they must also engage in air transportation.

The latest development in the

controversy is the introduction into Congress of proposed legislation which would amend the act to permit ocean shipping companies to apply for certificates of convenience and necessity to operate aircraft without having to show that such operations would be merely *incidental* to surface operations. The proposed legislation is now in Senate and House committees. It will probably be some time before hearings are set. The legislation's chief supporters are the aircraft manufacturers, who see passage as broadening their markets, and, of course, the steamship companies themselves. The railroads, although their support is lukewarm, are favorably disposed toward the legislation, viewing it as future

(Continued on page 28)



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SEA-AIR CONTROVERSY

(Continued from page 26)

insurance against the day when they themselves might decide to take to the air. Passage would not mean an automatic granting of routes to the water carriers. Convenience and necessity on the usual basis would still have to be proved. The airlines, the legislation's chief opponents, hope it will never go that far.

The ship operators have maintained all along that they should have the right to operate aircraft as an essential part of the transportation business which they pioneered and in which they are now engaged. They have also sought to receive from the CAB treatment equal to that afforded others, especially that afforded the shipping interests of foreign countries in respect to sea-air participation. In these efforts the shipping companies have not asked for exclusive rights in any direction. Nor have they asked for control over other forms of transportation or over trade routes, or for rights to operate domestic inland services. They have expressed no wish to engage in general air transportation beyond their own trade areas.

Steamship operators contend that: (1) their familiarity with world trade can be utilized to aid the expansion of U. S. air commerce; (2) the use of common facilities and agents will both stimulate air commerce and lead to economies of operation; (3) they have facilities for handling both passenger and freight transactions through one company, including facilities for handling heavy personal baggage too heavy for air transportation; (4) they can provide to tourists sea-air service enabling them to go one way by air and the other by leisurely ocean travel, a service which the ship operators contend has promotional possibilities which can be effectively exploited only by a combined operation.

One of the disadvantages alleged by the steamship operators to stem from a continuation of the present situation, particularly from the position held by the CAB, lies in

the fact that the above mentioned benefits are available to foreign competitors to the disadvantage of American sea and air carriers. Such foreign air carriers as KLM (Holland), Air France (France), BOAC (Great Britain) and SABENA (Belgium), to all of which the United States has granted foreign air carrier permits across the Atlantic, operate under sea-air tie-ups. The operators contend that the American-flag ship operators are handicapped by lack of flexibility in their operations and that this handicap is becoming increasingly serious as the CAB is required, through international reciprocity, to permit more and more foreign air carriers to reach U. S. airports. The shipping operators fear that our international air commerce will be swept from the skies just as our clipper ships, in the 19th century, were driven from the seas.

American ship operators also have claimed that our merchant marine is being threatened by the continued penetration of ocean traffic by the airlines, particularly as far as passenger transportation is concerned. They argue that the maintenance and growth of our merchant marine is not only desirable in and of itself but is dictated by considerations of national defense, and that more and more penetration of our existing sea commerce by air carriers threatens the very existence of the merchant marine, increases the need for costly subsidies, and reacts severely

on American prestige throughout the world.

The other side of the question—the attitude of the airlines—is that the benefits to be derived from a sea-air combination as advanced by the ship operators simply do not exist. The airlines' main arguments are set forth in the fine points below.

(1) Ship operator participation in air transportation is not essential to the maintenance of a strong American merchant marine. No substantial harm will result from international airline operations; in fact such operations will actually benefit the merchant marine. This applies not only to American-flag airlines but also to foreign maritime operators who get into air transport. Air transportation, both of passengers and of cargo, must succeed not from business taken from other carriers, but from traffic developed through its own efforts.

(2) Competition from foreign sea-air combinations is not significant since foreign airlines are usually independent of surface enterprises. There is, however, nothing to prevent close cooperation between American air and surface carriers. They could cooperate without controlling each other's policies. Moreover, it is expected that there will be so much traffic available to both plane and ship operators that there is no good reason why each should not obtain its proper share despite foreign competition from either sea or air operators or combinations of both.

(3) There is no cost or service advantage available to the sea-air services combined under the same ownership which would not be equally available to the independently operated ship company and airline through cooperation among themselves.

(4) Air transportation as a business is entirely different from water transportation. The vessels are completely dissimilar; air and sea routes have no relation to each other; and the operating, maintenance and personnel problems encountered by each have no similarity. Selling the transportation produced by each presents entirely different problems. A steamship

(Continued on page 47)

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18,000 pounds intercity, 16,000 pounds coast to coast in planeload lots.	60 x 80 x 90"	230 m.p.h.

PASSENGER-CARGO EQUIPMENT

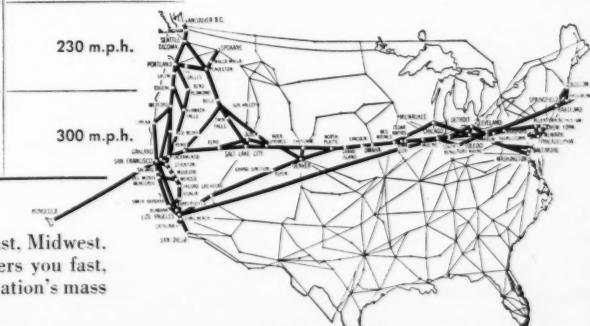


500 pounds	20 x 24 x 44"	180 m.p.h.
6000 pounds	24 x 57 x 88"	230 m.p.h.
5400 pounds	37 x 45 x 20" and 29 x 44 x 48"	300 m.p.h.

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EXPORT DAMAGE LOSSES

(Continued from page 21)



container may be good and still not be tamper-proof. The question is (apart from the fact that it is to the shipper's advantage): should the shipper be forced to pack securely enough to foil petty wharf thieves?

f. Steamship lines adhering to a system of regulation might find themselves refusing cargo which would be carried by competitors not subscribing to the code.

These are some of the imponderables. In spite of these and others, the growing seriousness of the situation makes it imperative that a solution be found. Here are some of the factors which make the problem so acute:

a. The value of American export goods failing to reach consignees at all or failing to reach them in good order has been estimated at the annual fantastic figure of more than \$750,000,000. Since the war—in a so-called seller's market—this figure cannot be computed completely, as many receivers do not report minor losses.

b. It can be proved from an analysis made by a large ocean marine underwriter that in the 10-year pre-war average, unavoidable damage from sinkings, fire, collisions, etc., constituted 47 percent

of all claims, and that preventable damage claims of all types amounted to 53 percent of the total. Also, that this latter type since the war has gone steadily upward to 68 percent in 1946 and 79 percent in 1947.

c. Other nations are staging a rapid comeback in ability to export goods and the United States is in danger of losing out in the world

market. Neglect of packing protection is partly responsible.

d. At best, settlement of claims reinstates the consignee's original investment—with no profit for months of work and waiting, during which time his money has been tied up.

e. Knowledge gained and used during wartime emergency has been largely abandoned. Present standards in many instances are lower than pre-war.

f. Shippers are paying—through hidden costs (higher ocean freight rates, adjusted insurance premiums, etc.,), loss of business and good-will—a greater sum than it would cost them for proper preparation.

g. Overseas ship conferences and exporters in industrial European countries are making faster progress towards adequate export packing specifications than similar groups in this country are making.

h. Pilferage is being encouraged in this country and abroad by the use of containers literally bursting at the seams.

i. Congestion in overseas ports caused by unidentifiable U.S. goods piled in mountainous quantities, is resulting in delays, losses and mis-

(Continued on page 41)

2.5 Billion Dollars

Data published by the *Foreign Commerce Weekly* (Dept. of Commerce) show that our volume of exports was lower last year than in 1947. Despite this our losses on export packing have increased. More significantly, preventable losses (due to improper packing and to pilferage) have increased disproportionately. Obviously, it cannot be argued that the increase in damage was due to increased volume of trade. And it is questionable whether any change in the relationship of commodity volumes would have caused this increase.

By comparison, the United Kingdom has increased its exports in the neighborhood of 35 percent over the same period. Although we do not have figures on the amount of export damage sustained by the U.K., we do know that that country is well ahead of us in establishing a packing code. It is notable that our exports have declined roughly in the same proportion that the U.K.'s has increased.

The above factual information indicates that we are, in effect, helping ECA nations again to compete actively in the world export market with our own traders. The American shipper no longer can expect to sell everything he offers. Both quality and service, as well as price, must be on a par with that of international competition.

Urgency in the direction of improved packing and packaging is indicated by the rapid strides made by the United Kingdom, France, and other countries engaging in export trade. Either our shippers—most or all of them, not just the most advanced ones—use packaging with an eye to a safety margin and without thought of a temporary gain, or our trade will drop like a plummet and all exporters, as well as packaging producers, shippers and insurance companies will suffer. Maintenance and expansion of exports is the nation's salvation.



Field Warehousing as a Business Stabilizer

You are a good credit risk, you have goods ready to move to market, but you do not wish to be embarrassed by a tie-up of needed working capital. Here is one case among many, where field warehousing can free capital, get goods moving, and help pull business out of the present lull.

By J. J. McMACKIN

BUSINESS failures have been on the upswing. In most cases this has been due to insufficient capital and to untrained management. Putting it more bluntly, management, finding itself in serious difficulties because of overstocking, poor gauging of the market, insufficient reserve capital, etc., should not look upon field warehousing as a means through which it can compensate for improper management or fundamental lack of capital reserves. Field warehousemen take a conservative approach, carefully examining the background of those applying for service. It should be kept in mind that field warehousing is an expense (as well as a source of income) and that its chief value is in evening out production schedules and in serving as a safety valve when exceptional circumstances arise. During this postwar period many people with small amounts of cash to invest have gone into business. Many of them have not had sufficient understanding of the production processes. They are now caught short. In such cases, emergencies cannot be mollified by re-

course to field warehousing service. These persons were and are serious risks, largely because they had knowledge of sales but no knowledge of production management. Field warehousing is a stabilizer in the field of stable business, not in the field of serious risks.

In other words, the use of field warehousing services is recommended not for those who are credit risks or who have a background of ill-advised operations, but for companies of good background having occasional or even repeated need of financing which, by creating additional business and profits, more than equals the cost of the financing.

Assuming that the risk factor does not exist or is negligible, the function of field warehousing offers significant aids to business. For one thing, there is a widely prevalent feeling today that there may be tax increases or labor difficulties. The feeling in many cases is akin to pessimism. This situation has



created a natural hesitancy on the part of manufacturers and producers to purchase raw materials in larger quantities and thus take advantage of savings in bulk purchase prices and in freight rates.

There have been many cases where deliveries of finished goods to distributors have been held up because it was felt that the distributor's financial position was such that he might not be able to meet payments.

These conditions represent some of the elements adding to present uncertainty. They can be combatted by use of field warehousing services. Such measures, in combination with the likelihood of a seasonal upturn in business activity in the near future, will go far toward reestablishing the even tenor of our economic ways. But, again, it must be stressed that field warehousing functions are additive; they are not a cure-all.

In field warehousing, inventory stored on the premises of a prospective borrower is placed in a collateral position for bank loan purposes. However, field warehousing

(Continued on page 63)



Water-Borne Cargo...1949

The prosperity of the United States and the security of its borders and possessions, are dependent upon a flourishing merchant marine capable of carrying our products to every port on the seven seas.

By FRANK J. TAYLOR
President, American Merchant Marine Institute, Inc.

OF CONCERN to every American exporter and importer is the legislation now before Congress regarding the participation of U.S.-flag merchant ships in the transportation of cargoes procured with ECA and other government funds. This legislation will determine whether American merchant ships are to have a fair share of these cargoes. It will also go a long way toward determining whether we will have an efficient merchant fleet in keeping with this country's present position in world affairs or whether it will deteriorate as it did after World War I.

When the Foreign Assistance Act was passed in 1948, Congress gave considerable study to the shipping aspects of the law. In writing the provision, which requires that 50% of relief commodities procured in the United States be transported by American ships,

Congress was well aware of the higher operating costs of U. S. vessels. ECA officials, however, have since interpreted the law to mean that they are not required to use American ships, unless they are available at world market rates. In view of the ECA's decision not to allocate bulk cargoes to American ships, except when they can meet the world rate, Congress has again been asked to spell out the shipping provision.

The Senate has before it a bill (S. 833) which would retain the 50/50 provisions, but instead of putting the rate on the basis of world market rates, American ships would have to meet the United States market rate. In the House a broader bill has been reported out by the Merchant Marine and Fisheries Committee, which held extensive hearings on the sub-

ject, receiving testimony from all parties of interest.

The House bill (H.R. 1340) would cover commodities procured by funds made available under any government financed program, irrespective of point of origin or points of destination. This would enable American ships to participate in the so-called "cross trades." As an instance, it would mean American tankers would share equally in the transportation of ECA petroleum from the Persian Gulf area to Europe. The Senate version is limited to cargoes procured in the United States.

It is interesting to note that some critics of the 50/50 rule decry it as "protection" for American shipping. Actually the 50/50 provision was put into the law in order to give European ECA nations a share of the business. Forgotten by many

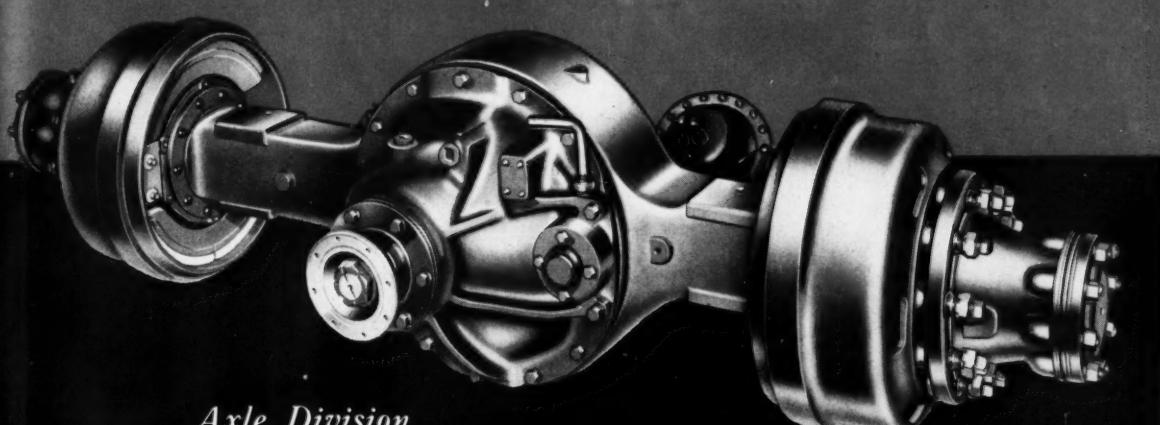
(Continued on page 51)

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Pulling out under full load, making time on the hills, or high-ballng on the straight-away—there is an operating speed range that's best for your engine—best for performance, for operating economy, and for engine life. Eaton 2-Speed Axles permit engines to run in this top-efficiency range under all conditions of road and load. This results in lower operating and maintenance costs, and longer life for the entire vehicle. Eaton 2-Speed Axles are available for most trucks of the 1½ ton class and larger. See your truck dealer for complete information.



Axle Division

EATON MANUFACTURING COMPANY
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SPRING LOCK WASHERS • SNAP RINGS • COLD DRAWN WIRE • HEATER-DEFROSTER UNITS • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, AND DYNAMOMETERS

New FAIRBANKS Series "21" Caster has NO King-Pin!



KING-PIN Construction

Look at the Difference!

between the king-pin and "LOCK-WELD" construction, after extensive laboratory and use tests under widely varying floor conditions!

For as long as most of us can remember, the king-pin has been the cause of most caster failures. Now, Fairbanks has licked the problem!

As a result of numerous designs and models tested, Fairbanks has developed the Series "21" — a pressed steel swivel caster with the unique "LOCK-WELD" construction. This revolutionary construction eliminates the king-pin and locks the curved top of the fork between the top and retaining plate so that the ball race sections remain properly aligned, even under excessive overloads. Proper alignment assures easy swiveling.

Fork design of the Fairbanks Series "21" Swivel Caster has been scientifically engineered to eliminate distortion under conditions of overload and shock. A series of arches built into the legs affords maximum dispersion of direct

Revolutionary
"LOCK-WELD"
Construction
removes the
cause of
most caster
failures

FAIRBANKS SERIES "21"

Swivel Caster

"LOCK-WELD" CONSTRUCTION

and thrust loads over the entire ball race — there's a purpose to every twist.

SWIVEL AND RIGID TYPES

Fairbanks Series "31" Rigid Casters have the same overall heights as the Series "21" Swivel Casters. Wheels are available in several types: semi-steel with plain or roller bearings; solid rubber with oilless bearings; vulcanized rubber with roller bearings; plastic with plain or roller bearings.

For truly longer-lasting casters, specify Fairbanks Casters. Use coupon or write for free bulletin describing this latest improved line of casters. The Fairbanks Company, 393 Lafayette St., New York 3, N. Y.; 520 Atlantic Ave., Boston 10, Mass.; 15 Ferry St., Pittsburgh 22, Pa.; 202 Division St., Rome, Ga.

Cutaway view of "LOCK-WELD" Construction



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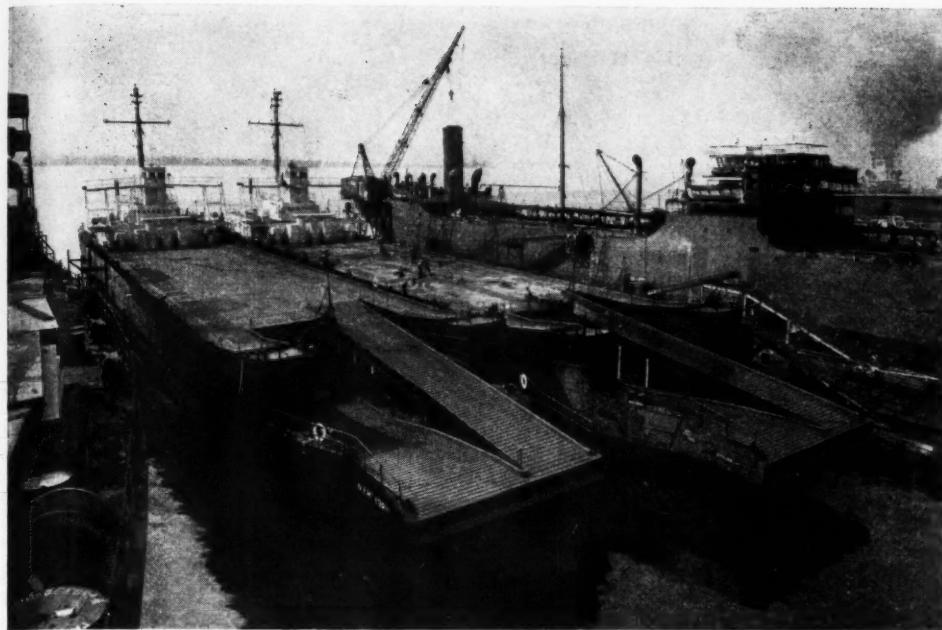
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Materials Handling on Inland Waterways

Some inland waterways carriers have the benefit of good or not so good materials handling equipment and are trying to improve further; some have poor equipment and are not doing anything about it. The latter need education, easier financing and new ideas . . .

By MATTHEW W. POTTS *Materials Handling Consultant*

THE inland waterways in this country are showing marked improvement in many ways; they seem to be getting busier all the time. There is a definite place for inland waterways in this nation's over-all transportation pattern; and in those numerous areas where their use is economic, they should be developed to the point where they can provide efficient, low-cost transportation without infringing on the rightful domains of other services. Yet, to provide efficient, economic service, they must be prepared to meet competition. To do it, many are concentrating on the installation of modern materials handling facilities.

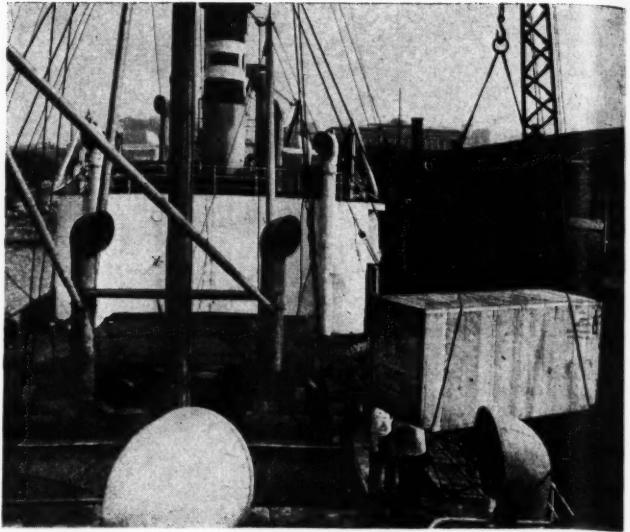
Some of the larger inland waterways, the Great Lakes for example,

have handling facilities almost equal to those of ocean ports. If the St. Lawrence River canal becomes a reality, the Great Lakes system will contribute heavily to the ocean-going traffic of the world, and lake port facilities will be on a par with the facilities of coastal ports.

In many lake ports we find docks, both at public terminals and at private industrial terminals, equipped with large mechanical handling equipment for dumping the contents of gondola cars directly into the ship's hold. Other loading and unloading terminals are equipped with conveyor belts, chutes and other devices for quick loading of bulk materials. At unloading docks and at certain transfer points,

such mechanical handling equipment as Hulett (and other) unloaders handle millions of tons of bulk material a year, unloading from vessels, loading into freight cars, to storage piles, or to other conveyor systems for transportation to storage or to point of use. These ports operate for only a relatively short season. Here is a clue to one reason why mechanical handling equipment must be used in quantity: to permit a quick turn-around and make possible an economical operation. At some lake ports package handling has been developed to a high degree. Many other improvements are contemplated.

Why are not the same developments
(Continued on page 38)



The Correlation of Man and Machine in Stevedoring

Stevedoring on top hatch freighters, vessels widely used in Great Lakes shipping, can become an efficient, low cost operation when the brawn of stevedores is coordinated with modern materials handling techniques.

By HERBERT H. LEDERER

STEVEDORING is a complex activity presenting many materials handling problems. Failure to study the boat and the nature of freight to be handled can result in serious losses. Merely to supervise the work is not enough. More important is good planning,

with a view toward simplifying the movement of tonnage and eliminating lost motion or double handling. A good stevedore boss sets his operation for a steady flow of freight with a minimum of physical effort.

There are probably two cardinal

points for good stevedoring, neither of which can be overlooked in efforts to handle freight efficiently and to save boat time for the ship owner: ease the strain on manpower; use correct equipment for the particular job. With improved methods, workers should not be required to do the amount of bull work they had to do in the "horse car" days when more brawn and less brain directed the operation. There is a limit to the endurance of the dock hand, beyond which fatigue leads to errors, accidents, mental discouragement, and eventually to complete lack of interest and pride in the work.

How is this heavy job made lighter and how can we thereby increase tons per man-hour? Plan with the ship's mate to pick the best spot possible for stowing cargo on board. Ships' officers are not unreasonable. They too have problems, and a friendly discussion and examination of freight before the ship is worked may well result in a saving of time and effort for all concerned. If time can be spared

(Continued on page 42)





STACKS LOADS 130 INCHES • CLEARS 7-FOOT DOORWAYS • HAS 66-INCH FREE LIFT

6 CAPACITIES*

(24" load centers)
3000 lbs.
to 8000 lbs.

*83" high Lift Kings
in capacities up to
5000 lbs. can ele-
vate loads 130
inches.



it's the new **YALE** *Lift King* electric truck

Never before has there been a telescopic fork truck like the new Yale Lift King. Built into it are quality and performance features that provide greater availability, utility, driver convenience and all-around safety than ever. Check these feature briefs, then let us give you full details.

130-inch Lift with an 83-inch high electric truck. Tiers 48-inch high loads nearly 15 feet—fast! 68-inch model has 100-inch lift.

83-inch Collapsed Height to clear 7-foot plant doorways and freight car doorways. 68-inch high model operates in and out of street trucks and trailers.

66-inch Free Lift on the 83-inch high Lift King. Stacks loads to the roof inside freight cars—secondary uprights don't elevate until forks pass 66-inch height. 68-inch model has 51-inch free lift.

Duplex Hydraulic Hoisting Unit—fast, smooth controlled lifting and lowering. Low pressure operation assures lower stresses on hydraulic lines and packing. No flexing lines to get fouled up.

Drives Like An Automobile. All controls at left. Steering is easy, shockless. Driver has clear view. Comfortable inflated seat, upholstered backrest. Seat elevates instantly when driver leaves it—shuts off power.

Hypoid Drive Power Axle like an automobile for attention-free service. Fully en-

closed to keep out dirt. Single oil bath lubrication. Full floating axles take road shock, vibration, torque without a whimper.

Cam-O-Tactor Control provides smooth-flowing power. 4 speeds forward and reverse. Foot pedal acceleration. Starting always confined to first speed for safety.

Automotive Action Hydraulic Brakes. Smooth, easy, safe equalizing action. Each brake individually mounted within wheels over wheel bearings. Sealed from grease.

"Ground-Gripper" Cleated Tires have a deep cushion of resilient rubber. Better traction, longer tire life, less road shock and a better ride.

Safety Construction. Frame is formed plate and bar steel—welded into a unit structure. Low center of gravity provides floor-hugging truck stability.

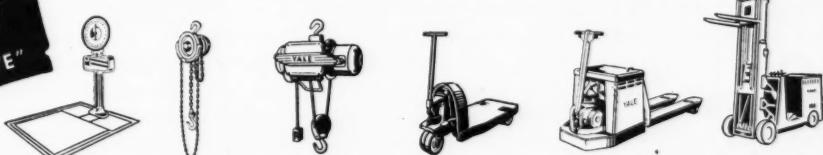
Your Service Man won't see much of this truck! But when he does, the easy, quick accessibility to all parts will win his praise because he can service the truck in a hurry without "breaking his back."

THE YALE & TOWNE MANUFACTURING COMPANY

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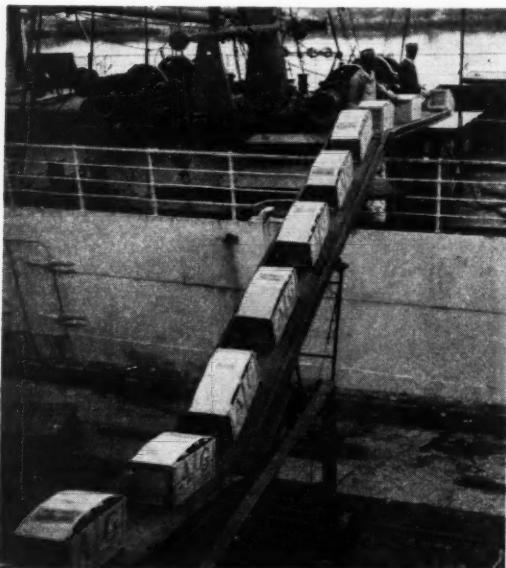
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INDUSTRIAL DIAL SCALES • HOISTS—HAND AND ELECTRIC • TRUCKS—HAND LIFT AND POWER

MATERIALS HANDLING ON WATERWAYS

(Continued from page 35)



ments evident on all our inland waterways—on which considerable money has been spent developing a system of canals and rivers for the handling of water traffic? One such system is the Erie Canal, the Mohawk and Hudson Rivers. Not so many years ago this system was materially improved by the state of New York. Terminals were built; warehouses, docks and mechanical equipment were installed to permit quick unloading. In fact, a start was made at that time toward developing a greater utilization of this inland waterway system for the handling of package goods. But today very little of this merchandise is handled over the route. Barge equipment and other facilities have been developed for the handling of such bulk materials as grain, oil, etc.

Through proper foresight and planning, and through better utilization of materials handling methods, waterways could be made to maintain a competitive position with rail handling, largely regardless of the commodity. Since there are neither frequent stops nor humping of the carrier (as in the case of rail transportation) waterway transportation should readily lend itself to unit load handlings, either palletized or unpalletized.

A typical example of the applica-

tion of the unit load principle to water transportation is in the handling of bricks manufactured on the Hudson River. Transportation cost, of course, is a part of the over-all cost to the user. Most of the brick manufactured in the Hudson River Valley is used in construction in and about New York City. It has been found that this brick can be transported economically and quickly by barge from the point of manufacture to the various points of final distribution. The many little rivers, creeks and canals in this area make it possible for the barges to carry the brick to terminals adjacent to the points of use for further distribution by truck.

To reduce handling costs further, a system has been developed whereby the bricks are built into unit loads of from 1,250 to 1,500 bricks each at the point of manufacture. They are placed in the kiln for firing. The units are handled by means of large fork trucks, and by overhead locomotive cranes equipped with a special fork attachment known as the "Priester fork." After the bricks have been fired they are handled out of the kiln as a unit, handled again to the barge as a unit, and after transportation by barge to the terminal, unloaded as a unit, placed on the

dock, handled again for storage as a unit, and later picked up as a unit and loaded into the trucks for distribution to the job.

Note the number of unit handlings, all of which materially reduce the cost of transporting the brick from point of manufacture to point of final use. At least 80 percent of the handling of brick is by modern methods. Practically all brick yards are equipped to handle in these unit loads. There is no doubt that other unit package handling could be developed for barges, not only on the Hudson-Erie Canal system but on other waterways in the coastal areas, as well as on the Mississippi, the Ohio, etc.

During the war use of the LST proved to be one of the finest means of unloading quickly at undeveloped ports. But because of the labor situation, use of these vessels has not continued in peacetime. That is not to say that what appears to be a labor problem is purely labor. Consider the case of Trailerships, Inc. A few years ago this organization obtained an ICC permit to carry trailers between New York and Albany. A month later the service was in full swing. It used two converted LST's. Six months later the ships were berthed "temporarily." The reason was ostensibly (and largely) labor difficulties. At the New York City end, labor conditions were peaceable; at Albany the political capital of New York, it was impossible to get the labor cooperation essential to the existence of the service. It will be noted in this connection that difficulties were not on a national level, but on a state level.

The ships are still tied up. No change in the character of the traffic has warranted this suspension of activity. To digress for a moment, the value of the service lay in the fact that it saved wear and tear of trucks, which could move (loaded or unloaded) up or down river cheaper than if they rolled by their own power. Pier service was expeditious; the trucks just rolled on board, aided by ramps built into the LST's body.

Use of LST's in other service (such as on the Great Lakes, the Ohio or the Mississippi) would re-

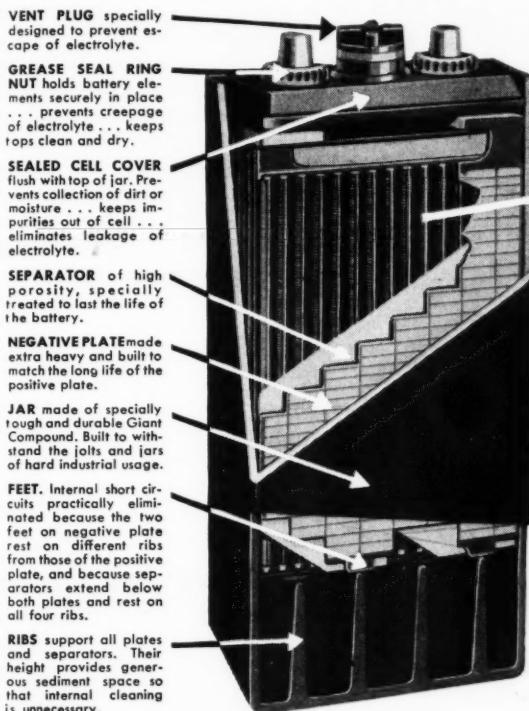
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EXIDE-IRONCLAD BATTERIES

ARE DIFFERENT!

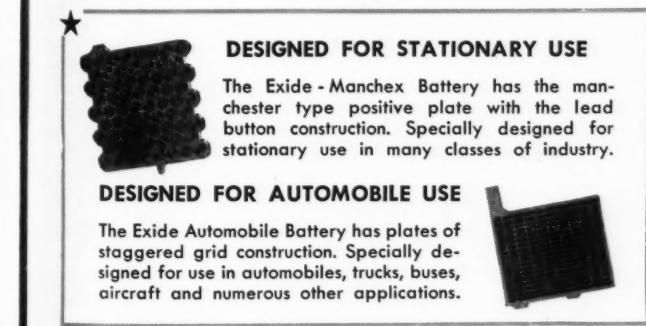
They are specially designed to provide years of dependable service in all MOTIVE POWER WORK

Storage batteries are called upon to perform many tasks. No single type of battery is adequately suited to all. To meet these numerous requirements, Exide engineers have developed special types, to fit each application. They differ in a number of ways, but chiefly in the positive plates around which the other elements are built.★



DESIGNED FOR STATIONARY USE

The Exide - Manchex Battery has the manchester type positive plate with the lead button construction. Specially designed for stationary use in many classes of industry.



DESIGNED FOR AUTOMOBILE USE

The Exide Automobile Battery has plates of staggered grid construction. Specially designed for use in automobiles, trucks, buses, aircraft and numerous other applications.

Among these several types is the specially designed Exide-Ironclad Battery. It was developed to meet the need for a heavy-duty battery with great reserve power and the ability to discharge at high rates, at high voltage and over a long period of time.

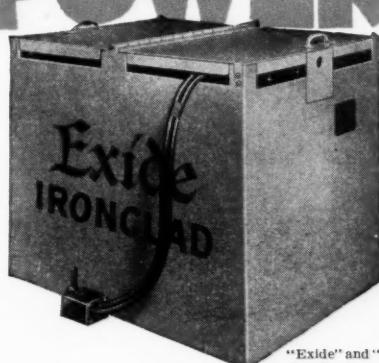
Exide-Ironclad Batteries are DIFFERENT . . . different in design . . . different in construction . . . different in service qualities. Chief among these differences is the unique positive plate, an exclusive Exide feature.

EXIDE-IRONCLAD POSITIVE PLATE

• Consists of a series of finely-slotted tubes which contain the active material. So small are these slots that, while permitting easy access of electrolyte, they retard the active material from readily washing out or jarring loose . . . adding considerably to life of plate.

Exide-Ironclad Batteries have ALL FOUR of the characteristics that a storage battery must have to assure maximum performance from battery electric industrial trucks—high power ability, high electrical efficiency, ruggedness and a long life with minimum maintenance. The combination of these four Exide-Ironclad characteristics assures years of dependable day-in, day-out service.

DEPENDABLE POWER



"Exide" and "Exide-Ironclad"
Reg. Trade-marks U. S. Pat. Off.

1888...DEPENDABLE BATTERIES FOR 61 YEARS...1949

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

DRAVO TRANSPORTAINERS

THROUGH use of Dravo Transportainers in its export shipping, Allis-Chalmers Mfg. Co. has realized a saving of over 66 percent on its export packaging and loading costs.

Forty-eight 5 KVA transformers, packed in lightweight crates ordinarily used for short domestic shipments, were loaded into Transportainers and shipped to Puerto Rico. The containers have a capacity of 275 cu. ft. Had the containers not been used, each transformer would have been packed separately in heavy wooden export cases. Individual handling of each case during shipment would have been required. Use of the new method brought down the cost of packaging and loading the transformers to one-third the former cost. Moreover, packed inside the steel container, the transformers were protected against damage and pilferage.

Special Uses

On a construction project near Dravo headquarters, located in Pittsburgh, Transportainers are serving as foundations for portable field offices and as tool cribs. Dravo's Contracting Division decided that the containers' maneuverability and weatherproof characteristics qualified them for use as tool houses as well as for use as shipping containers. They can readily be moved from job to job. Carpenters went to work and built shelves in the interiors of the Transportainers. The installation of lights marked another step in the conversion of shipping containers into "homes." The men on the job agreed that use of the containers as tool houses saved considerable time and expense. Ordinarily a tool house must be constructed at each new job. The containers are equipped with lifting lugs and skids and thus can be easily handled by cranes or lift trucks. They can be locked securely; thus pilferage is minimized. Handling expense is cut because the Transportainers can be moved intact. Tools and equipment remain inside during moving.

BRASS ON THE MISSISSIPPI

(Continued from page 19)

know inland waterways, the river is heavy with traffic. As we drifted down the river, which broadened visibly every mile southward, we met, at least every quarter hour, a tow of barges going our way or heading north to Memphis, St. Louis, Cairo, Minneapolis, St. Paul, or to the many other scheduled landings on the Mississippi and the Missouri. They tell you that along this 1,000-mile run between Cairo and the Gulf of Mexico the river carries more business today than it had ever carried before. Incidentally, from Cairo, Ill., to Baton Rouge, La., the engineers maintain a navigable channel 300 ft. wide and nine ft. deep. Below Baton Rouge the river is navigable for ocean-going vessels, except in the Atchafalaya region and through the Intra-Coastal Canal. One diesel-engined craft which we saw pushes along with 14 barges on the 2,000 miles between New Orleans and Minneapolis, and shuttles back and forth with the regularity of a clock.

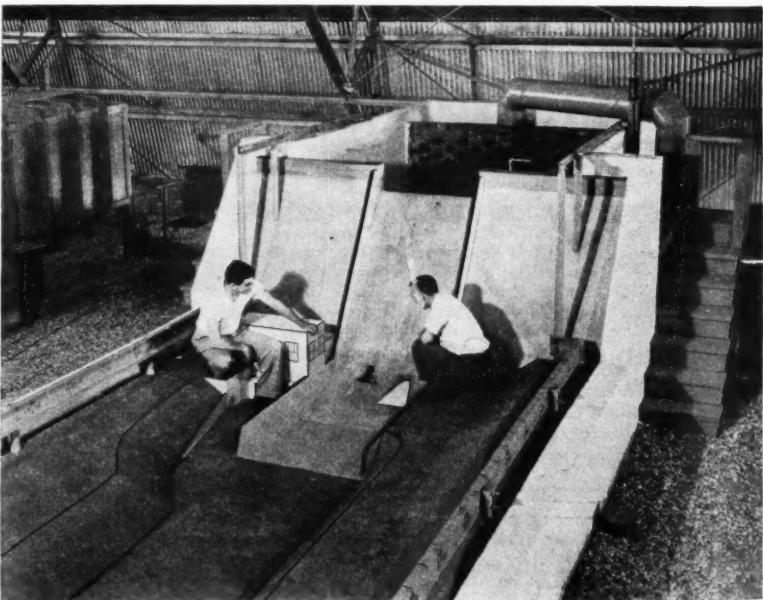
You see much scrap iron handled on the river. It is loaded on the barges with a magnet loader. The barge lines carry sulphur, sugar, bauxite, chemicals, sand and gravel, steel, ore, cotton, lumber,

automobiles, canned goods, electric cable reels, paint, cotton seed cake, cotton linters, etc. There is reported to be a steadily increasing barge traffic in small goods, which are packed in containers made by Dravo and by one other company. These containers have 14,000-cu.-ft. capacity. The container is locked before it is loaded on the barge; the consignee at the other end has a duplicate key with which he unlocks the container. The container itself is lifted on or off the barge by derrick or steam crane, with which the waterside facilities, such as the Waterways Terminal Corp., are equipped.

Waterways Terminal, incidentally, heads up at St. Louis, and consists mainly of the terminals originally established by the Federal Barge Lines and later sold to the owners of the present corporation. Terminals are reported to be in operation at Memphis; Helena, Ark.; St. Louis; Vicksburg and New Orleans. Local and commercial interests at various points have set up port and harbor facilities to handle the large quantities of cargo moved along the river. These installations provide for the interchange of raw materials and fin-

(Continued on page 49)

A Spillway Model



EXPORT DAMAGE

(Continued from page 30)

direction even to properly packed and marked goods. A water front terminal in a mess trying to locate goods, deteriorates further with each new influx of cargo. Recently, several ports, notably Manila and harbors in the Netherlands, were the object of investigation by underwriters who stood to lose millions because of wholesale failure of shipping containers.

The meeting at the N. Y. Maritime Exchange did not mark the first attempt to do something concrete to improve export packing. Many of the groups represented at the meeting have been trying for years. Several offices of the Department of Commerce; the Maritime Commission; the damage prevention sections of large insurance firms, the cargo claims experts of various eastern and western steamship lines, business and maritime associations and export packing technicians have struggled with the problem. Much valuable material has been issued for the guidance of those who sought help.

Further, among the shippers in one or two fields some progress is being made toward self-regulation. A good example is in heavy metals. In 1944 the American Iron and Steel Institute published helpful suggestions for packing, marking and shipping steel products. They have come to be adopted almost universally by that trade, and afford an example of how self-regulation on an industry-wide basis can be made to function. The important thing here is that the procedures set up reflected the best thinking and experience available.

Despite these activities, the problem was not being attacked on a wide, world-frontal basis. This was reflected in the continually increasing post-war losses in water freight shipments. There was an obvious need for a coordinated plan, and if possible, a plan with teeth in it. The "teeth" might be a code (covering various types of cargo) which would be backed by legislation. It might be tariff and insurance rate differentials to penalize the shipper who used unsatisfactory export con-

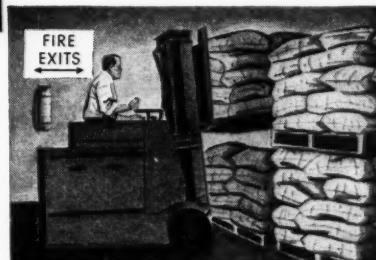
(Continued on page 44)

WHEN INDUSTRIAL TRUCKS ARE

Battery-Powered
**UNIT-LOAD SAVINGS
ARE GREATEST!**



HIGH-TIERING with clean, safe battery power in this wholesale grocery warehouse doubled effective storage space, released valuable space for other purposes. Here, one hundred 25-pound sacks of flour, made up as a pallet-load, move as a unit into surplus and from there to the order selection line.



CLEAN, SAFE, COOL—the electric truck features that appeal strongly to another user handling foodstuffs—this time, a canned soup manufacturer. Plant officials say they selected battery-powered equipment because "it is fume-free, presents a minimum of fire hazard and gives off no heat in 'constant temperature' rooms".

Throughout production and distribution, battery-powered industrial trucks assure unit-load handling most dependably, most efficiently—at lowest cost per ton handled. Thus America's top industries, with years of owning and comparing, favor electric industrial trucks over all other kinds.

Unit-load savings are industry-wide. Both you and your supplier profit, for instance, when you specify unit-load packing. You save again through unit-load handling in your own operations. Then you and your consignee profit when you ship in unit loads.

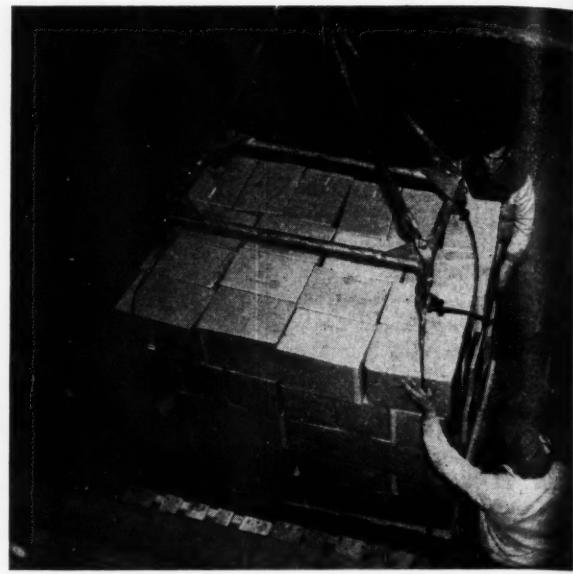
Put this new formula to work. Specify unit loads to your plant . . . in your plant . . . from your plant. And for greatest efficiency in your own industrial trucking, specify battery power.

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ASK FOR the 56-page Material-Handling Handbook, now in its fifth printing, a popular and reliable guide to Unit-Load Methods. It's free.



MAN AND MACHINE

(Continued from page 36)

in stowing cargo on board by choosing proper space, the chances are that a like saving can be effected in ships discharged. This is an important factor with any ship operator. The stevedore bosses must know their freight, and oftentimes must mix items for the same port. This is especially helpful when loading 'tween deck. Instead of lowering all the heavy freight into the hold first and then filling in on top and under combing with the lighter merchandise when the space is tight and less workable, the latter should be lowered into the hold for top loading at the proper time.

Stevedores should not be forced to drag freight to its place of rest in the vessel when the lift can be brought to the point of stowage. Loaded pallets can be shoved as a unit on conveyors to obscure places fore and aft of the hatch, into the wings and under the combing, by placing conveyors before landing the load. If equipment is always accessible, the time consumed in setting up conveyors is little, compared to that saved in handling and piling freight. It is the dragging, rolling and carrying of bags, barrels and boxes that fatigues the men. By the same token, why have men lift freight while piling it

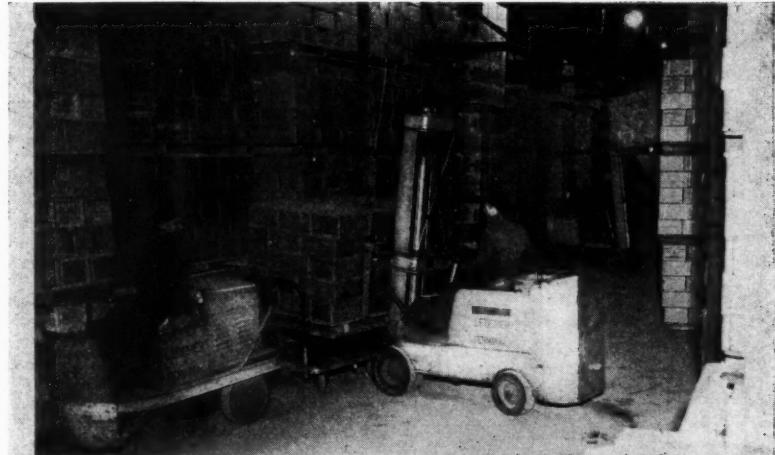
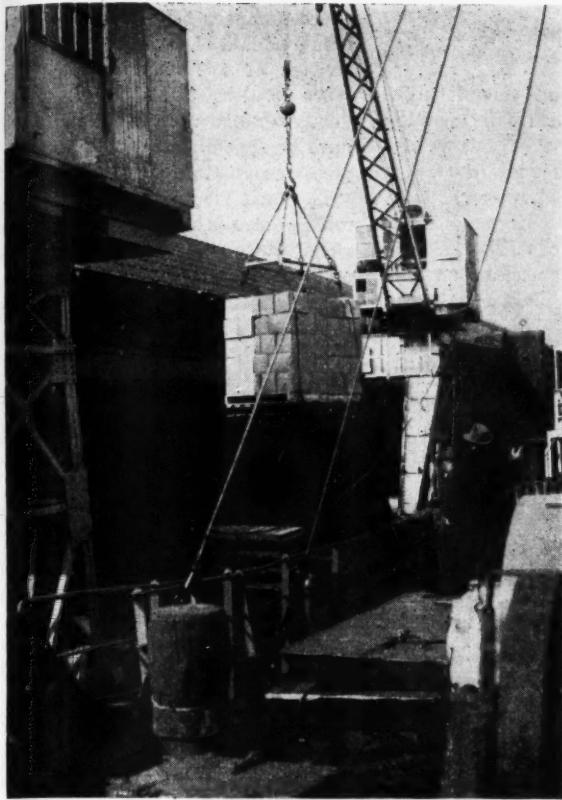
away in the boat, when it requires so much less effort for them to pull a bag off the loaded pallet and drop it into place?

Too often, men standing on the skin of an open hatch pile bags or barrels as high as they can reach, when the pallets could have been allowed to accumulate and build up a platform off which the men could slide the freight and drop it into place. Simple, of course, but it makes work lighter—and that pays dividends. To pile a 100-lb bag ordinarily requires two men, but a stevedore will handle it himself if he can drop it into place. He unloads his lift quickly and then takes a few seconds' rest between passes of the crane. He keeps fresh and saves his strength for later hours, when stamina is needed.

Difficulty has been experienced in working refrigerated boats carrying cargoes of frozen fish fillets and berries. The hatches are small and there are usually only two, side by side in the forward part of the vessel. Tight quarters often make it necessary to work both holds at the same time with one shore crane. The perishable nature of the commodity requires that there be fast movement.

The accompanying photographs indicate the simple method of handling with palletized loads both in ship and on the house side. The double conveyor in the boat is turned with rollers to the floor, permitting the empty pallets to be stacked on one end of the conveyor as a working supply. The pallet to be loaded next is picked off the supply stack and set on the conveyor in front of the empties, and is rolled under the combing to the freight where it is loaded and again rolled back into the square of the hatch to be hooked up. Two small pallets, 33 x 48 in., are placed end to end on a large stevedoring type pallet, 48 x 66 in. Each small pallet carries 45 boxes of fish weighing approximately one ton, so the two provide a draft of two tons per lift. The load is then landed on the dock where small one-ton fork trucks pick off the top pallets, leaving the large stevedore type pallet on the dock to be used again in combination with small pallets. The loaded small boards are placed in trailers by the fork trucks and rushed to warehouse freezers where they are again stacked without a single package being rehandled.

When working normal size hatches, it is good practice to split the hold men so that both port and starboard sides of the vessel can be loaded or unloaded simultaneously without delaying the crane.



Such an arrangement prevents listing of the ship and affords the men a breathing period between crane lifts. Furthermore, it sets up an element of competition between the two groups of workers and keeps the shore crane or ship's gear swinging steadily and with fewer interruptions.

Reference has been made to preparation of the freight on the house side for most convenient and simple handling in the boat. One item explains the thought in mind. Welding rods in cases approximately two feet square, weighing 500 lbs., were received at the warehouse and placed on pallets about 12 to the board for storing on the floor prior to arrival of the steamer. It was found that this required separate handling of each 500-lb. case when loaded in the ship. We now store this commodity in the house with fork trucks in units two or three deep and four high, with dunnage between each unit of eight or 12 cases. This permits the same pile height on the warehouse floor

(Continued on page 46)

EXPORT DAMAGE LOSSES

(Continued from page 41)

tainers. It might be self-regulation on an industry-wide basis. But something had to be done; a wider program had to be tackled.

A foreign trade committee of the San Francisco Chamber of Commerce took the initiative for co-ordinating the interests on the West Coast; and in New York, during October, 1947, a committee of cargo claims experts from the steamship lines met with the members of the Maritime Association and others concerned with loss prevention, to delve into the question of the advisability of establishing a central bureau to control packaging.

Formerly, consideration was given to the feasibility of moving from voluntary self-regulation to incorporation of standards in regulated export packing codes or in clausing bills-of-ladings which would permit a rate penalty for goods improperly packed. The central bureau which would administer the program would be staffed by packaging technicians who would investigate and

study export problems, consult with shippers and steamship lines, and develop minimum packaging specifications for export containers.

Large shippers, however, protested against any agency smacking of government control. While agreeing that better packing on the part of certain offenders should be encouraged, it was felt that such imposed "codes" might force American shippers to charge more than foreign competitors, and in some situations might cause them to lose out on foreign trade. Also, exper-

enced shippers felt that they were being penalized because of the activities of the come-and-go freelance traders who offer a lot of goods against a letter of credit and have no special interest in good export preparation.

The next step taken by the committees also proved to be up a false alley. It was thought that inasmuch as export packing must anticipate different climatic and working conditions in various sections of the world, further progress should be entrusted to the steamship freight conferences, which, it was expected would develop sectional programs. However, this procedure failed to produce the desired results.

Finally, the important shippers agreed to support a program (which, after all, is designed for their benefit) if the conception of an enforcement agency administering a fixed code be abandoned, and in its place there be substituted the voluntary approach, possibly along trade lines. The Maritime Exchange meeting was called, and the enthusiasm engendered indicates that at last something will be done.

Floor Ruts Evened

Ruts and holes in floors, driveways and platforms can cause serious injury to personnel and major damage to equipment and merchandise. Stonhard Stonfast, a floor patching material produced by the Stonhard Co., Philadelphia, provides an easy means of keeping surfaces flat. In using the product, no mixing or preparing is necessary. Ruts are evened through the simple procedure of filling in with Stonhard and then tamping down. The area can withstand heavy trucking immediately. Material can be used for both indoor and outdoor surfaces.

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• Save Money,
Floors, Equipment
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DISTRIBUTION

(Continued from page 15)

Clearly, our statistics, our thinking, our procedures and our goals have been channeled and formed largely by the traditional thinking of business as disclosed by the thinking and activities of the Department of Commerce. This brings up the point that such a proposed Department of Distribution (if limited roughly to the service performed by the Department of Commerce—aid to business rather than control of it) would not further government intervention in business but would give business another aid, another source of information, another government agency devoted to the interests of business. In addition, it would further the reduction of disproportionate distribution costs.

Included in such a department would be all forms of transportation, handling, insurance, finance (advisory on problems of costing and other accounting procedures), warehousing, packing and packaging and miscellaneous marketing activities linked to the movement of raw, semi-finished and finished goods to points prior to final distribution. Clearly, the ICC and other existing bodies could find places in this department as subordinate agencies. It would therefore be necessary for agencies representing other forms of distribution to be established. This in itself would prove beneficial; more coordination of activities within certain of the above distribution functions would not be amiss.

Such coordination would, for instance, further industry's ability to function closely with the armed forces in time of national emergency. Certainly, the Navy, to give one example, has been doing a great deal in the fields of warehousing and materials handling, and in other fields of distribution. Must leadership be left to the armed forces? Is not leadership within the province of private industry? Such initiative will best be directed not toward the limited goals set by the Hoover Commission but toward U. S. Department of Distribution.

\$1,500 inventory abolished— at a cost of \$4.46!



With more than 700 vacuum tubes needed by industry, a tube distributor would find profits consumed by 100% inventories. But by ordering tubes as needed via Air Express, he holds stocks to 25%. Example: Orders \$1,500 tube at 9 A.M. from supplier 900 miles away. Delivered to customer 6 P.M. same day. 16 lbs.: cost, \$4.46.



Remember, \$4.46 included speedy pick-up and delivery service, too. More protection, because you get a receipt for every shipment. Air Express is the world's fastest shipping service.



Your Air Express shipments go by the Scheduled Airlines direct to over 1,000 airport cities; fastest air-rail for 22,000 off-airline offices. Shipments keep moving with 'round-the-clock service.

FACTS on low Air Express rates

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(Every kind of business finds Air Express pays.)

Only Air Express gives you all these advantages: Special pick-up and delivery at no extra cost. You get a receipt for every shipment and delivery is proved by signature of consignee. One-carrier responsibility. Assured protection, too—valuation coverage up to \$50 without extra charge. Practically no limitation on size or weight. For fast shipping action, phone Air Express Division, Railway Express Agency. And specify "Air Express delivery" on orders.

SPECIFY AIR EXPRESS



GETS THERE FIRST



Rates include special pick-up and delivery door to door in principal towns and cities

AIR EXPRESS, A SERVICE OF RAILWAY EXPRESS AGENCY AND THE
SCHEDULED AIRLINES OF THE U.S.

MAN AND MACHINE

(Continued from page 43)

with equal accessibility for fork truck operation. Upon arrival of the boat, the eight or 12-case units are lifted off the pile by fork trucks and moved to string piece where they are hooked up with cable slings and placed in the hold of the ship as a unit, rather than as individual 500-lb. cases. Should the freight be stowed back under the combing, a fork truck can usually be used in the hold of the boat without disturbing the unit load.

The less physical strain on the men, the greater the production. This was proved emphatically in the unloading of a cargo of nickel in 600-lb. small barrels directly from boat to car. The first thought was to palletize the freight, six barrels to the pallet. After four hours the men were tiring, slowing up noticeably. Tonnage dropped to less than half the first hour's tonnage. It was obvious that breaking over the barrels, rolling them on to the pallet and up-ending again were three major moves. The hold men could not keep up the pace. The car men met with similar difficulties. It became clear that an easier way had to be found. The method substituted was so obvious that we felt stupid for not having used it from the start. We rigged up a bridle with six sets of chains and barrel hooks. The barrels were only 21½ in. high, so the bridle was arranged to land six barrels in pairs to fit on the deck of 3 x 6-ft. four-wheel trucks. The hold men then broke over barrels between swings of the crane. The hook-up was fast and made with little effort. The car men liked it too because the barrels easily rolled off the side of the trucks and into place on the car floor. It took fewer men, less tugging and no power equipment except the crane. Tractors were not used, although we had them. The short push across the house was easy, and kept the men moving rather than waiting for the tractor to back the truckload in through the car door. Small, awkward 600-lb. barrels literally poured off the boat. The men were waiting for the crane (in contrast

to the original method) and half the number of hold and car men handled double the tonnage.

Correct equipment must be used for the particular job. The tools are the secret of both high production and high wages. By the same token, tools can be abused and misused. Tools have ruined capital investors. Machinery must amortize itself either by producing more in less time or as much with less labor.

The smart superintendent will ask himself: "How many men would it take to do the job by hand methods and how many men with power equipment?" or "How many more tons per man hour can be produced by means of machine?" If neither of these questions can be



The above model crane, 8,502, is a 7.5-ton model (one of several) offered by Coles Cranes, Inc., Chicago. The crane is powered by a Ford V-8, 47-h.p. gas engine, has a turning cycle of 40 ft. and moves two m.p.h. loaded and four m.p.h. unloaded on level ground, according to the company. Its four motions, hoisting, swinging, derricking and traveling, may be operated simultaneously by one-man control. The crane travels on four pneumatic-tire wheels; brakes are electromagnetic, automatically applied in hoist, boom-hoist and swing. The crane comes with automatic safeload indicator. Stability is stated to be ample at any point in the full swing of the superstructure.

An additional feature is the adaptability of the equipment to special attachments: clamshell buckets, demolition ball, etc. These are available for numerous operations. In this connection, the company offers complete facilities for service, sales and parts through leading dealers.

Other details include generator (for above model) rated at 11 KW at 1800 r.p.m.; the hoist motor is six h.p. at 900 r.p.m. There is a choice of models from 1.5 tons to 15 tons, with 7.5- and 15-ton cranes available, truck mounted. Selected dealers all over the U. S. and Canada will be stocked with spare parts, and it should be noted that a few choice territories are available for dealers.

answered showing a saving through use of machinery, let power trucks stand idle—you haven't a job for them.

In the case of the nickel boat operation, mention was made of the fact that we did not use tractors to pull four-wheel trucks across the floor into box cars. We found that the movement, as set up, gave plenty of time for car men to perform this work. If they had not done it, they would have stood idly by while the tractor and extra driver backed the truck in through the car door for them to unload. This would not have been economical.

A power operator should know his stuff. He is more or less a one man gang, and if he needs help for the job that he and the machine should do alone, either the work is not properly planned, the operator is not fully competent or you are attempting a job too great for one man and a machine. Too often, labor is thrown around carelessly without regard to cost. Some fork truck operators have men trailing them to make sure they handle loads on or off the piles without damage. If the operator is efficient he will check this himself. He, in turn, should have the equipment needed to do a workmanlike job: a spotlight on the mast for dark, tight work and a guard overhead to prevent merchandise from falling on him in the event of a miss move.

Equipment

"Correct equipment" for the particular job refers not merely to kind of equipment; it means capacity as well. You don't send a boy to do a man-sized job and you don't need a giant to thread a needle. Lighter equipment is usually more maneuverable and less expensive investment-wise and from an operating standpoint. Capacity should be determined by the commodity handled, property structural conditions, location of goods picked up or placed at rest, elevators, length of travel, pile height and other contributing factors.

Accessories to fork truck equipment, such as pallets, rams, crane arms and special attachments must be carefully studied. Likewise, bridles, snatch blocks, swivels, etc.

(Continued on page 52)

SEA-AIR

(Continued from page 28)

company sells transportation of large, bulk cargo at a speed of from 12 to 20 m.p.h. The price is low. The airline sells transportation at 300 m.p.h. The price is high. The airline must develop new ideas and new methods of doing business if they are to persuade the shipper that air transportation is worth the money.

The same conditions apply to the transportation of passengers. Before the plane comes into its own, entirely new classes of passengers must be developed. They must be sold with particular relationship to the technical characteristics of air transportation. The ship operator is selling passenger transportation at about 23-25 m.p.h.; the airline salesman is selling 300-m.p.h. transportation, and in many cases is competing not with the steamship company, but with the cable and the trans-oceanic telephone.

(5) Ship operator experience in surface transportation provides no qualifications for air transport. The fact that the shipping companies may regard the plane as "merely another mode of transportation to be adapted to the business they have been engaged in" indicates (if true) a fundamental misconception of the business of air transportation. It is felt by air men that steamship men have the wrong conception of the plane's role in transportation if they see it merely as an adjunct to their surface vessels—as a way of improving their steamship business.

Ownership of one type of carrier by another has been the source of perennial dispute in this country. No definite policy has been adopted. It is recognized that there are certain transportation services for which one type of carrier is best suited, but Congress has never absolutely restricted carriers, either by legislation or by declaration of policy, to the operation of one transportation facility only. Separation of operations is largely the result of CAB and court interpre-

(Continued on page 66)

**Volume—BIGGER
Efficiency—GREATER
Cost—LOWER**

More and more businesses in more and more places are learning that the field of Materials Handling provides the best and the richest opportunities for cost reductions—for SAVINGS.

"Use of the 'fork-truck-and-pallet' system has been greatly broadened and rapidly adopted by progressive warehouse operators. At North Pier Terminal we have used it for more than 5 years, in conjunction with the tractor-and-trailer system. We now operate 25 Clark machines and consider them a vital factor in handling an increasing volume of materials with increased efficiency and at greatly reduced costs."

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REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

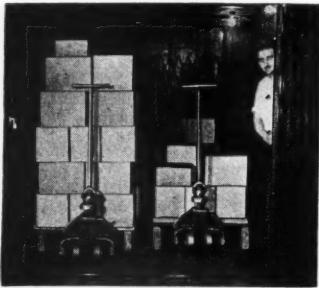
WHY STEER CLEAR?

(Continued from page 17)

of differentials. Note in the table that the differential is (reading across the bottom two lines) 13c., one cent, minus one cent, and 4.5c. The chart shows what this pattern looks like. Note that each weight class is not uniform in size, but the differences are not such as to account for the zig-zagging. Also, a comparison of class rates and commodity rates for abrasives, Boston 1 to New York 1 show palpable irregularity. The two commodity rate series selected from the table (lines two and four) taper off sharply after moving parallel. The class rate series (first and third lines) spread and contract, spread again and then contract again, in a most unaccountable way. Lastly, whereas the class rates are far above the commodity rates at the lower weight levels, at the higher weight levels there is no appreciable difference. Where is the great saving at heavy loads? If you truckload shipments, the biggest saving is only 4.5c. per cwt.

RED GIANT LIFTRUCKS

Give Your Business A LIFT



A pair of Hydraulic RED GIANTS facilitate transfer from floor to floor.

Put RED GIANT Hand Liftrucks to work for you for easy moving of heavy articles in shop, warehouse or factory, for loading and unloading and many other jobs which do not require the expense or weight of a power truck. Low first cost and low operating expense.

Arc welded steel members give RED GIANTS great rigidity. They roll easily on Timken bearings. 5 Models—capacities to 15,000 lbs.

Send for catalog stating weight and size of material to be handled.

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THE ENGRS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

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REVOLATOR PORTABLE ELEVATORS

The above illustration is but one out of 997. If analyzed, they would all go to show that commodity rates do not pay. In addition, it should be pointed out that pier delivery class rates are higher than regular class rates. But this has nothing to do with the lack of systematization in rates. In other words, not only should there be some order in rates, but some reductions, particularly in connection with pier deliveries.

This brings up the second major problem confronting truckers who haul to and from piers. Let us assume that you, a shipper, have a carrier who will accept your freight for pier delivery. Your load weighs 2,000 lbs. This point is important: your load takes only 10 percent of the cubic capacity of the truck. Other trucks are at the pier too; some are loaded to 20 percent, some to 50 percent of capacity, and so on. Is it surprising that there are long lines of trucks waiting unprofitably at the piers? Is it any wonder that there

is congestion? And how about the time lost? Maximum free time for unloading is 15 minutes. That's where charges for "unreasonable delay" start to pile up.

To recapitulate the above losses:

1. There is a (we shall say) 90-percent loss factor involved in the load; that is, 90 percent of cubic space is unoccupied;

2. There is the time consumed in unloading. If delivery is to be made to, say, three piers, then there is the same time loss at each pier;

3. Involved in each excessive delay are penalties for delayed unloading.

The answer to this situation is a pooling plan. This plan, of course, would not affect ratings. But it would certainly reduce one of the major costs involved in pier loading and unloading. Large carriers who deliver daily or periodically to piers would find this pooling suggestion advantageous to the extent that their own waiting time would be cut.

Here is the suggestion: first, all local carriers who make pier de-

(Continued on page 53)

A Traffic Manager's "Must"

AS Richard C. Colton says in his book, "Practical Handbook of Industrial Traffic Management," ". . . if a concern would require a report of all excess transportation expenditures . . . there would be general amazement, if not downright disbelief, at the amount so expended." Mr. Colton, in his survey of the vast field of traffic management, has the basic premise that care, accuracy and good judgment, together with a precise and soundly grounded knowledge of the field, are more necessary today than ever before. He feels this may be largely because of the growing complexity and ramifications of traffic management.

Mr. Colton has referred to basic

forms, documents, legal decisions and standardized procedure. He has drawn upon such technical sources as Morris S. Rosenthal (consultant; prominent in the export-import field, well-known as instructor at Columbia University), AWA, industrial corporations, transportation companies, G. Lloyd Wilson and Distribution Age. The result is a compendium of information.

This work should aid the traffic manager (as Mr. Colton says) "to cope with: freight classification, freight rates, consolidations, demurrage, audit of freight bills, expediting and tracing, claims, routing, packing, contracts, insurance, credit arrangements, local trucking, warehousing, diversions and re-consignments, transit privileges, branch house selection, side track installations, rate guides for salesmen, public relations with carriers . . ."

Packaging Events

Packaging Week is May 9 to May 13; the slogan is: "Proper Packaging Cuts Costs, Increases Sales." Highlighting that week is the 18th National Packaging Exposition and Conference on Packaging, Packing and Shipping, to be held in the Municipal Auditorium, Atlantic City, N. J.

There will be six conference sessions, at which more than a score of experts will discuss current problems and their wide ramifications in the national economy. Conference hours will be from 9:30 to 12 noon, and from 2:00 to 5 P.M., excepting the Tuesday morning session (9:45 A.M.) and the Wednesday afternoon session (2:30).

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Man with 15 years' experience in merchandise warehousing, formerly connected with a mid western organization in executive capacity. Thoroughly versed in operations. Location secondary with good progressive establishment. Can furnish unquestionable references.

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BRASS

(Continued from page 40)

ished products between the water carriers, the railroads and the highways. Much of the cargo moves landward by truck transport lines.

This rapid sketch is preliminary to a more detailed treatment in later articles. These will deal with the effect upon commerce and distribution of the work the engineers have done in flood control and in maintaining navigation.

The S.S. Mississippi was fitted up by the engineers to be a floating office and conference hall, as well as a boat to push barges and haul cargo. It has an impressive cabin in which are held hearings about the problems of industrialists, merchants and agriculturists. The Mississippi goes up and down the stream and its tributaries, housing the conferences and hearings to which interested parties are summoned.

It is the floating home of the Mississippi River Commission and of the Corps of Engineers of the Memphis and Vicksburg Districts. The MRC, a stepchild of the Corps of Engineers, is a federal body coming under the supervision of the Chief of the Corps of Engineers. It has its headquarters in Vicksburg. It is responsible for the administration of those affairs of the federal Government and of the people of Louisiana, Alabama, Mississippi, Arkansas, Kentucky, Missouri and Illinois who are affected by the problems of the lower Mississippi.

Gen. Feringa presides over the hearings held on the S.S. Mississippi. These hearings go into lower Mississippi land and flood problems stemming from the Mississippi and its tributaries. The problems usually come to the Commission with the certification of the local drainage boards—boards working out of the various states and subdivisions of the states.

For the work done by the federal government in the region, Congress has authorized over one billion dollars, of which \$658,107,424 has been actually made available. Much of this expenditure

(Continued on page 59)

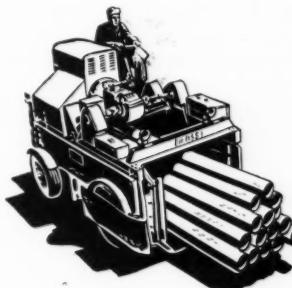


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... are a "CINCH" for ROSS Lift Trucks

Handling this heavy unwieldy conveyor assembly is typical of the jobs expected to be done by ROSS Lift Trucks. And such unusual tasks are routine for the versatile ROSS. That is why more and more plants look to ROSS for time-saving, cost-reducing big-load material handling.

Profit from the experience of others . . . make the ROSS Lift Truck a vital part of your material-handling system. There is a wide range of dependable gasoline-powered models to fit your plant's specific needs. Three types, nine models . . . capacities from 5,000 to 18,000 pounds. Consult ROSS . . . it will pay dividends.

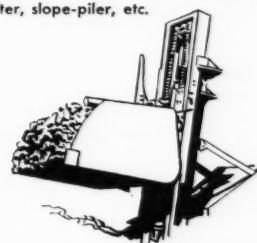


ROSS INDUSTRIAL CARRIERS

Five types, capacities 10,000 to 30,000 pounds . . . cost-cutting team-mates of ROSS Big-Load Lift Trucks.

SCOOP ATTACHMENT

Permits lift truck to efficiently handle coal, sand, snow and other loose materials. Controlled from driver's position. Easily attached and detached. Fits all models . . . Other attachments include ram, snowplow, side-shifter, slope-piler, etc.



Rely On
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THE ROSS CARRIER COMPANY

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Direct Factory Branches and Distributors Throughout the World

MATERIALS HANDLING

(Continued from page 38)

quire conversion expenditures. They would have to be changed to meet the requirements of piers now in existence. This would cost money, and that presents a difficult problem in this period of financial stringency and tighter bank policy. And, of course, there would be no guarantee that labor problems would not arise on some other route. There is demand for just such a service in other areas; this has been determined by actual survey. But the highway carriers have a present demand for the service and must do without, thus imposing a cost burden upon them. As against the argument that the ship service might have cut employment, there is the argument that greater use of LST's would mean more shipment by highway, more production of ships and hence employment in other directions. The end result is inefficiency and economic loss—loss to the shipping industry, to the highway industry and to the general public who must now pay higher prices.

As to the materials handling aspects, it is interesting to note (see picture on the first page of this article) that handling equipment is incorporated into the boats in the form of ramps. Complementary equipment is fork trucks, which

bring commodities up the ramps. The whole principle of the ramps is that rolling aboard is the cheapest way to load, and it obviates labor.

It is true that there are certain features of the LST which need improvement; but the changes are minor. With small alterations the LST should be able to handle a wide variety of cargo. In fact, with proper planning, an LST could be so arranged that cargo could be rolled into it during loading, and rolled out of it during unloading.

Use of LST's is possible on Long Island Sound and on the Cape Cod Canal. This could reduce the amount of congestion through the residential areas of Westchester County, Connecticut, Rhode Island and Massachusetts. Why isn't more of this being done? The LST should be able to operate satisfactorily on the larger inland rivers because of its shallow draught. LST's are not excessive in length although they might be too high for bridges and other overhead structures in certain areas.

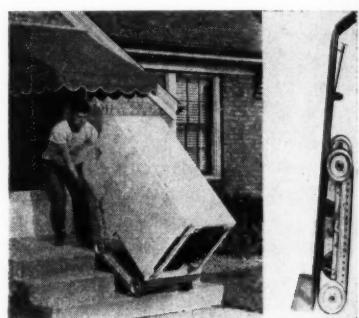
At the present time there seems to be a tendency on the part of the Maritime Commission to divert most of our shipbuilding facilities to the building of tankers. Very little is being done toward building new vessels for handling dry cargo. We seem to have a surplus of ocean-going vessels. Why can't some of these vessels be put into use in our coastal waters? And if they are not suitable for coastal service, it might be a good idea for the Maritime Commission and the Inland Waterways Commissions to consider building smaller dry cargo vessels either on the LST pattern, or better yet—on a pattern more modern still. These ships could be used as auxiliary vessels in a national emergency. Such vessels, employing the LST bow method of loading and unloading, would eliminate the need of elaborate piers and docks. Terminals could be quickly developed by constructing simple slips for quick unloading. These slips could be adjacent to and connecting with our highway systems. Thus the vessels

would be utilized for economic handling and still tie in with other means of distribution.

Some of the economies being realized through handling and transporting by water are lost because of the high cost of stevedoring. If proper study were made of methods of loading and unloading, there is no doubt that economies could be effected. These studies could mean reductions in handling time and costs at loading and unloading points, thus materially reducing both the time required for shipment and the cost of the shipment, and increasing the profits of the companies operating the water transportation systems. In most instances, however, we find that the waterway operating companies are continuing to handle with the methods which have been employed for the last two or three generations. The railroads and trucking companies have begun to look seriously for better methods of handling at terminals and warehouses, and for loading and unloading cars and trucks. As their methods are improved, competition will be even greater than it is now.



The above Transtacker, a product of Automatic Transportation Co., Chicago, has a suspended fork with a 21-deg. tilt backward and a five-deg. tilt forward. The truck, which is battery-powered and comes in two models (single lift and telescopic) weighs from 3,400 lbs. to 4,000 lbs. and has low clearance. Ramp clearance is facilitated by 4.6-in. clearance beneath the frame. Capacity of the telescopic unit is 3,100 lbs. for 28-in. long load, 2,600 lbs. for 36-in. load and 2,100 lbs. for 48-in. load. The company states that the high pressure hydraulics, and the counterweighting and other features, contribute to effective operation, durability, safety and economy. Stress is laid on freedom from fire hazard.



This "Trak-Truk," offered by American Machine Works, Inc., Racine, Wis., moves bulky loads up to 500 lbs. over stairs, curbs, end gates of vans, etc. The crawler base has continuous rubber belts; no metal touches the floor or other surfaces. On level surfaces, the truck may be quickly converted into a general utility truck by retracting the crawler base. Wheels are grooved and made of aluminum; heavy weights are stated to have no effect on the movement of the rubber belts. Wheels are adjustable for belt tension. The base pivots in such a way as to provide maximum contact for the belt regardless of angle; thus the user need not stoop to maintain proper balance. Automobile expansion-type brakes, controlled by a cable pull, allow varying degrees of braking so that the load may be held stationary on an incline or allowed to move at low controlled speeds. Height is 55.5 in. standard (or to suit), width 24 in.

WATER-BORNE

(Continued from page 32)

is the fact that the provision set aside application of an older and more basic law which, if enforced, would have reserved all ECA cargo for American ships. This law, Public Resolution 17, passed in 1934, applies to all exports from the United States, financed by government loans or grants to foreign nations. It is far more drastic than the ECA statute, but the provisions of Public Resolution 17 were waived in order that European shipping could be assisted and revived.

But why is this 50/50 shipping provision important to American foreign traders? The American shipping industry is taking the long-range viewpoint in this matter: if it is going to be in the position to offer fast, dependable, and regular service in the future, it must be assured of a just share of ECA cargoes until normal commercial trade is revived on a full scale in all countries of the world.

Many of our American-flag companies maintain services in which there is little commercial cargo at present, and if they are deprived of carrying at least half of the ECA cargo, their operations would suffer tremendously. Some of these lines, in keeping with our national maritime policy as set forth in the Merchant Marine Act of 1936, are under contract with the United States Government to provide and maintain frequent and regular service irrespective of cargo offerings.

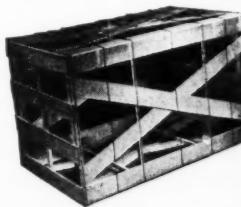
We believe that American exporters and importers are now fully aware of the importance of American-flag shipping services. The American foreign trade community has had much sad experience in the past when it has had to depend solely upon foreign-flag steamship services.

We have had a recent instance of this, following ECA's announcement that American ships would soon be barred from carrying bulk cargoes. The immediate reaction to this announcement was an increase in rates on foreign vessels. It is not hard to realize what would happen to rates if there were no American ships in the trade.



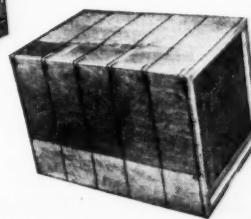
FIBREBOARD BOX

Attractive, low-cost. Fully enclosed, panels steel stapled to wood cleats. Superior reinforcements. Supplied flat for easy assembly.



WIREBOUND CRATE

Strength-tested, lightweight. Built-in support features. Easy handling, stacks well. Supplied flat for wrap-around assembly.

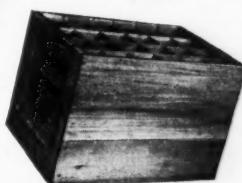


ALL-BOUND BOX

Wood veneer panels, steel wirebound for strength. Completely enclosed. Protects contents from weather, dirt.

NAILED WOOD BOX

Materials and workmanship to meet or surpass Government Specifications for domestic or export shipments.



**RELY ON
American
BOXES AND CRATES
FOR ALL YOUR SHIPMENTS**

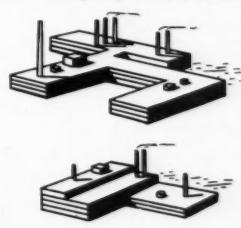
The nearest thing to shippers' "utopia": the complete box and crate service by American. Backed by 48 years of shipping box engineering and manufacturing, a full line of scientifically constructed boxes and crates have been developed for all your shipments—domestic and export. American is equipped to meet all your specifications; size, shape, appearance, quantity, etc., plus ample protection against severest shipping conditions. Engineered for accuracy—machine-produced for economy. A free-trial packing, with estimate, is yours for the asking. We welcome your inquiry.

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TWO GREAT PLANTS (Est. 1901)

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MAN AND MACHINE

(Continued from page 46)

in connection with crane work, are important in effecting a smooth uninterrupted movement of freight. For example, in fork trucks, we have found a small one-ton machine most desirable at our inland houses. The high ceiling space lends itself to smaller pallets while the same small truck piling in low ceiling areas is more efficient with a pallet of about 35 percent more deck surface. Waterfront operations require heavy fork trucks with three-to six-ton capacity and large pallets for the bulk of the work. There too we have often found the small one-ton truck a valuable tool for special jobs in cars, truck bodies and 'tween deck of boats where hand work would ordinarily follow.

Freight handling for the most part is the continuous movement of commodities from point of contact to point of rest with a possible transfer from one piece of equipment to another somewhere between. The fork truck is most efficient as a piling machine and should not travel over 200 or 300 ft. If the fork truck is fed by a tractor-trailer movement it can naturally handle more freight in a given length of time with less wear and tear on the equipment. If freight is of such a nature that it can be moved from the car by a fork truck, small machines may be used to load pallets on four wheel warehouse trucks to be pulled in trains to large fork trucks and piled to great height in the warehouse. No hands need touch the freight. Such an array of equipment is capable of moving tonnage out of two or possibly three cars at a time with no more labor than would ordinarily be used in a one-car operation. This is peak use of power equipment. Of course, conditions must be proper for such an operation to be undertaken.

The shore crane represents the largest single capital investment in any one type of equipment and must pay its own way. The contractor is required to handle lifts of all sizes and weights up to 40 or more tons. As in the fork truck, capacity is a factor. If you want efficiency, don't expect everything

from one piece of equipment. Heavy lift derricks will lift light loads, but at a sacrifice of speed and low operating cost, and at higher initial investment. Furthermore, heavy lifts are more the exception than the rule for the general cargo contractor. The gantry type crane, preferably electric, with five- to six-ton capacity, offers speed, economy and adaptability to normal use. Good work has been done with ship's gear as well, but it is the opinion of those who have used both that the traveling gantry is faster and more flexible, and permits greater accuracy in spotting the lift. These qualifications reflect tons per man-hour, and tons per man-hour is the yardstick for measuring profits.

Supervision

Cranes, like other powered pieces, are only as effective as proper supervision allows them to be. No good crane operator, skillful as he may be, can do a job without an alert hatch tender, and both are dependent upon the understanding and support of the men working at the end of the sling. These men are the physical handlers of the freight and, because of their number, represent the greatest cost. Their production is determined by the amount they handle in a specified time, and their limitations are those of the average dock hand. They are called upon to place large, heavy boxes, open machinery and other unusual cargo, beyond the capacity of their physical strength. Power must be harnessed to place awkward freight fore, aft and in the wings of the hatch. Thus, the crane requires accessories to lighten, and make more efficient, the labor of the hatch crew. Probably the most effective accessory for this sort of stowing is the ordinary snatch block. With proper rigging, seemingly insurmountable objects are dragged with a minimum of manpower into obscure space in the ship. The shore crane or ship's winch furnishes the power, while the hold men merely guide by the

hook-up of one or more snatch blocks and a few crow bars or rollers.

The well-equipped shore crane should have a boom of the correct size and length. It should be capable of handling capacity loads on two, three (or more) part lines, and normal lifts on a single or two-part line. The latter may be accomplished by a boom extension for reaching the outside of the vessel or placing loads convenient for the hatch men working in the wings. A boom extension will naturally reduce the capacity of the crane but it will permit more rapid hoisting and lowering with a single line, thus, the operation becomes faster and more flexible, provided the capacity is not out below the requirements of the general run of cargo.

The type of block swivel and cargo hook used is an important factor in crane operation. Too many minutes are lost because of twists in cables and through fouled blocks and hooks on hatch combings. These minutes soon become hours on the payroll books. Also, one should consider bridles, slings, clamps, grabs, hooks and like accessories used over and over in the process of handling cargo in and out of the hold. Here again seconds become minutes and hours of wasted time, effort and revenue. In addition, the men become fatigued. The hook-up should be as light, fast and secure as possible but must meet the requirements the lift demands. Speed and ease in hook-up are essential, but not at the sacrifice of safety to men or load. Many ingenious contraptions, which make the task simpler and the operation faster, are effectively used in this connection.

Stevedoring is indeed a science. Every move must be a study in planned efficiency. There is no single method applicable to all materials handling problems, but there is an underlying basic principle of approach. These are two points that all good stevedores know, but too often fail to recognize in their own handiwork: the principle that human endurance must be spared, eased and held in reserve; and the principle of harnessing power forces to meet requirements economically and efficiently.

WHY STEER CLEAR?

(Continued from page 48)

liveries should pool their l.t.l. freight at some convenient terminal. Each contributing carrier would be given truckload tonnage to a pier in proportion to the total tonnage turned into the pool. In this way, a great number of carriers would not have to go to a given pier each day, but their freight would be delivered. Shippers could still maintain contact with the local carrier and with the freight being shipped. The carriers would not have equipment tied up for long hours. The carrier would receive a very large proportion of line haul charges. Congestion at piers would be materially reduced.

The expenses of the pool terminal could be borne by the contributing carriers in proportion to the tonnage cleared by each. Large carriers could benefit despite assumption of part of the pool terminal expenses; the pool would lessen their own waiting time. Also, steamship companies might even be willing to offer financial assistance to this plan, since their gain would be in the consolidation of receipt of shipments.

The second part of this suggested plan is that carriers located outside of the metropolitan pier areas get together and determine among themselves which piers each will serve, and on what days each will serve them. This would assure daily coverage of all piers.

The question of steamship company cooperation is the only really doubtful part of the entire plan. By "steamship company" we mean also the labor part of ship loading and unloading. No trucker can handle unloading on a pier; that's the job of stevedores. There are supposedly "standard heavy lift charges." What are they? Just what the pier boss says they are; you pay them or you drive away. Of course, there's a gimmick to this. Never, never drive up in the early morning or early in the week; that's when the pier boys still have to make a good day's or week's pay. If you arrive late in the day or late in the week, you stand a

(Continued on page 55)

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Cold Storage on the Great Lakes

Because of the requirements of nature and man in the Northeast's direction of flow of waterways and commodities, Merchants' warehouses were ideally located in Buffalo. Also, careful planning of layout and use of equipment are making this enterprise the leader in its area.

By ETHELYN WELLER

THIS is a study in strategic warehouse location and in the importance of both a simple handling procedure and the need of a public warehouse to accommodate a variety of merchandise without confusion. The case history below revolves about two warehouse buildings located in Buffalo. This city is an inland waterways hub and has the services of four great rail trunk lines: the Erie, Baltimore and Ohio, New York Central and Pennsylvania. Buffalo is a terminus of the Erie Canal; the city lies between two of the great Lakes and has large amounts of relatively cheap power.

Under present conditions, commodities requiring warehouse service include a variety of perishables and non-perishables. The volume is tremendous despite the fact that most of the freight on the Lakes (in terms of weight) consists of durables, grain and fuel. Stress is laid on this post-war situation because the freight before the war was different in certain important respects. The change that has taken place in 10 years has been little short of revolutionary. It highlights the remarkable achievements of the Merchants Refrigerating Co. in adapting itself to changing conditions.

For many years before the war, Buffalo harbor was a port for "package" freighters. Most of the merchandise was carried by a fleet of boats known as the Poker Fleet, so called because of the boats' names—Ace, King, Queen, Jack, Ten and Nine. These boats, of 2,500-ton capacity, were built for salt water use, and carried packaged and refrigerated freight from

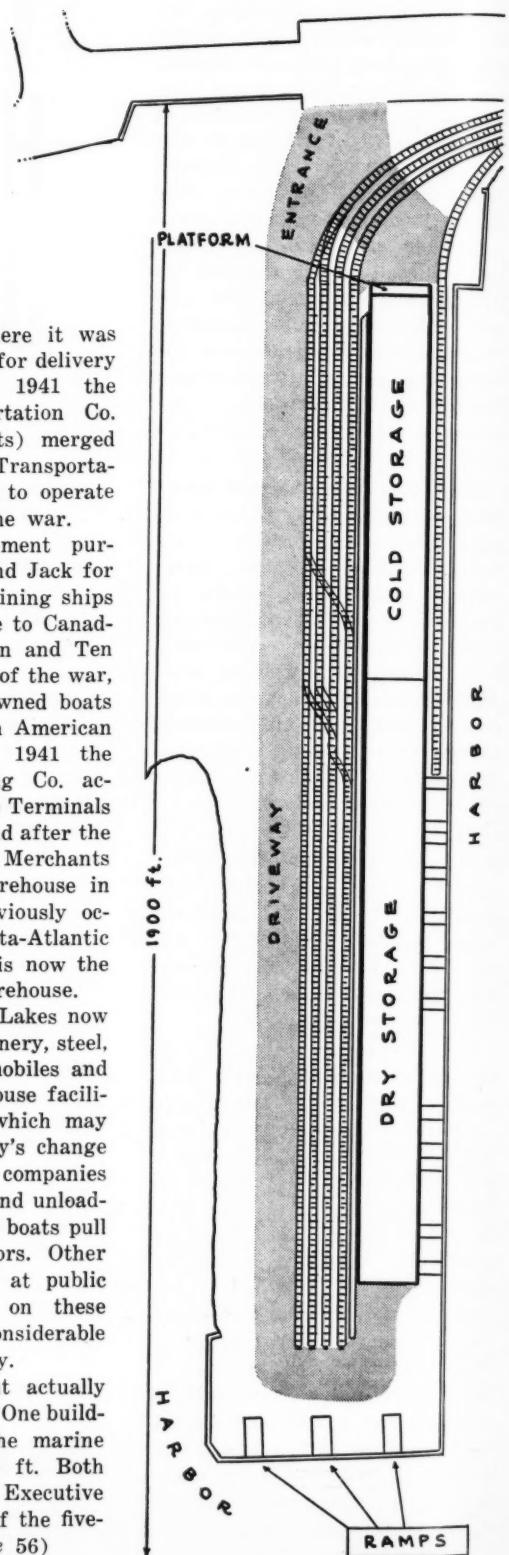
Duluth to Buffalo, where it was put on fast reefer cars for delivery to Atlantic ports. In 1941 the Terminals & Transportation Co. (which owned the boats) merged with the Great Lakes Transportation Co., but continued to operate the Poker Fleet until the war.

In 1942 the government purchased the Ace, King and Jack for war purposes; the remaining ships were also sold, the Nine to Canadian interests, the Queen and Ten to Brazil. Since the end of the war, the three government-owned boats have also gone to South American owners. In September 1941 the Merchants Refrigerating Co. acquired an interest in the Terminals & Transportation Co., and after the sale of the Poker Fleet, Merchants took over the huge warehouse in the Buffalo harbor previously occupied by the Minnesota-Atlantic Transit Co. Merchants is now the main Buffalo marine warehouse.

Freight on the Great Lakes now consists largely of machinery, steel, pulp wood, grain, automobiles and oil. There are no warehouse facilities for such freight, which may well explain the company's change of interest. The steel companies have their own loading and unloading docks, and the grain boats pull in at the giant elevators. Other merchandise is handled at public docks. The equipment on these docks is simple, and considerable manual labor is necessary.

Merchants' huge plant actually consists of two buildings. One building is 500 x 80 ft.; the marine warehouse is 750 x 80 ft. Both structures are concrete. Executive offices are in the front of the five-

(Continued on page 56)



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WHY STEER?

(Continued from page 53)

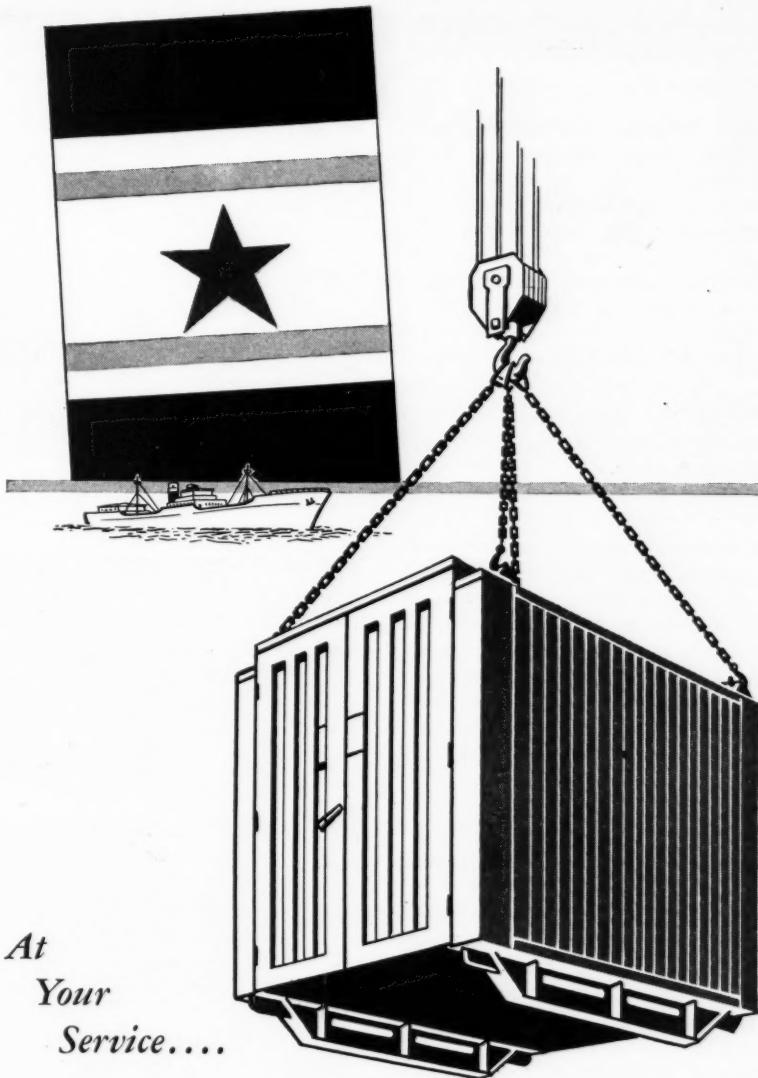
good chance of getting off scot free because the boys have gone home and the steamship company labor will handle the freight. Formerly, this was the regular thing; all you did was drop your freight, pick up your receipts and drive away.

The problem of excessive labor charges is twofold. For one thing, many carriers know that these charges will be imposed on them, and consequently advise their shippers and then bill them. This raises transportation costs. The shippers want to get the costs back; ultimately the cost is reflected in the price of the commodity. Secondly, the labor charges problem cannot be solved by the truckers, since it is essentially a steamship company-government-pier owner problem.

To summarize the entire problem of motor carrier pier deliveries: let it be stressed again that more than one party is responsible for excessive costs at any point in the distribution of commodities. To clean up an obnoxious and wasteful situation there must be complete cooperation among shippers, carriers, pier and ship owners, federal and local officials, and, last but not least, the ICC. This body could start the ball rolling by doing a housecleaning on rates. It is among the carriers that cooperation must start. There is no sense trying to pass the buck down the line.

Insuring ECA Cargoes

ECA Administrator Paul Hoffman has rejected the proposition urged by marine underwriters that part of the insurance on cargoes under the Marshall Plan be written by U. S. companies. Instead of a "must" rule, the situation remains as it did since Feb. 28 when it was stated by ECA that foreign importer might use ECA dollars for insurance, thus offering "dollar" attraction to foreign consignees. Many consignees located in foreign countries have been insuring exports from the U. S. with foreign companies. The reasons are both customary practice and the fact that, up until recently, it was almost impossible to obtain dollars through claims. Whether or not the dollar argument is valid, the fact remains that much business has been lost.



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COLD STORAGE ON THE GREAT LAKES

(Continued from page 54)

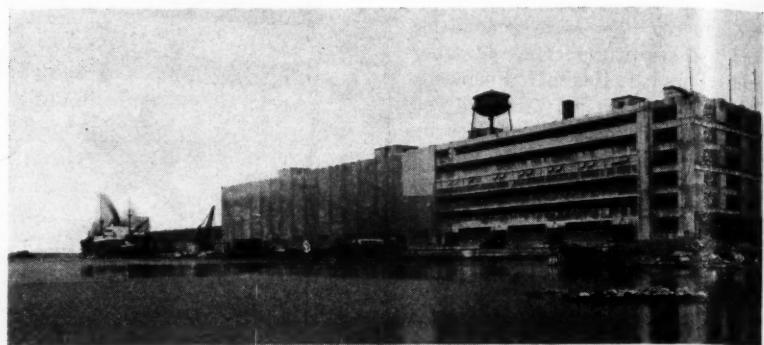
story building. The marine warehouse, while almost the same height, has only one story. In all, there are 1.4 million cu. ft. of refrigerated space and one million cu. ft. of general storage space in the two buildings. The front section, containing all the refrigerated rooms, is divided into several parts. It is serviced by six elevators, five of three-ton capacity each, the sixth of five-ton capacity. These elevators travel at the rate of 250 ft. per minute.

There are 20 refrigerated rooms, 12 of which are used for holding produce at zero or sub-zero temperatures; the remaining eight are used as coolers, at temperatures of from 30 to 40 deg. F. It is possible to store 25 carloads of merchandise at one time in any one of these rooms. There are also two blast freezers for processing. They have a capacity of 75,000 lbs. per day, and an air blast temperature of 30 deg. F.

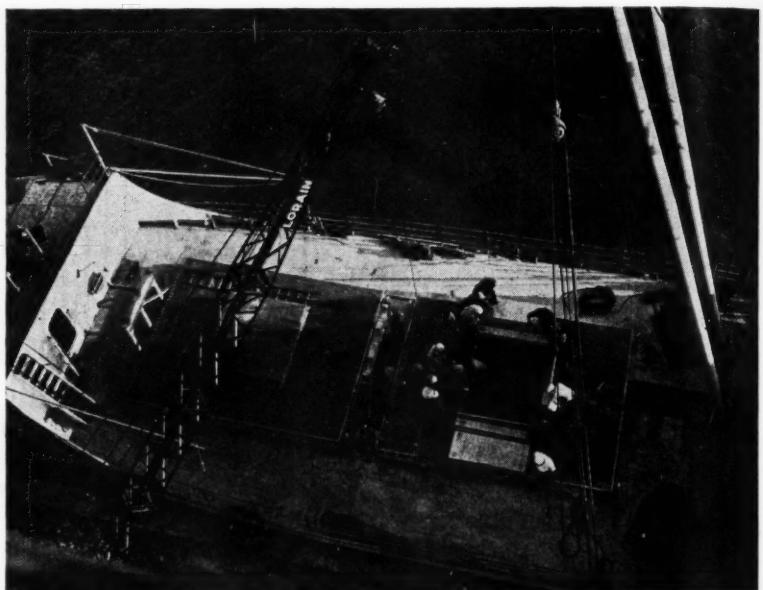
These refrigerated rooms house all types of perishable merchandise, while the two blast freezers are used for fresh processed commodities which come into the warehouse ready for quick freezing. After freezing they are moved to adjacent rooms and held at zero degrees until removed to refrigerated trucks or railroad cars for further distribution. This merchandise is sometimes held for several months.

Both buildings are 100 percent palletized. Three sizes of pallets are used—2 x 4, 3 x 4, and 4 x 4. The latter are used in the huge marine warehouse where pallets are often piled to the lower ends of the great girders that support the roof. All merchandise in this section is general consisting of consignments of flour and sugar in large paper bags, giant bales of waste, boxes of cheese, and cereals, soaps, canned fruits and vegetables, and other items.

An interesting situation arose when Merchants offered to store sugar and flour on pallets in paper bags. Many warehousemen doubted that it could be done without tearing the bags, but a system has been



View of south side of Merchants Refrigerating Co. warehouse. Big freighters dock here, but only small Newfoundland boats discharge cargo.



Frozen fish are unloaded from Newfoundland boat into warehouse.

Sugar in paper bags on pallet being loaded into railroad car.

worked out that is deemed highly satisfactory. One pleased customer is a large baking corporation which stores quantities of flour in paper bags in the warehouse.

These hard-to-handle items are treated as all other merchandise coming into the warehouse. All merchandise, whether in bags or cartons, is placed on pallets in the railroad cars or trucks in which it arrives at the warehouse. The pallets are picked up by one-ton gasoline lift trucks and moved to

(Continued on page 66)



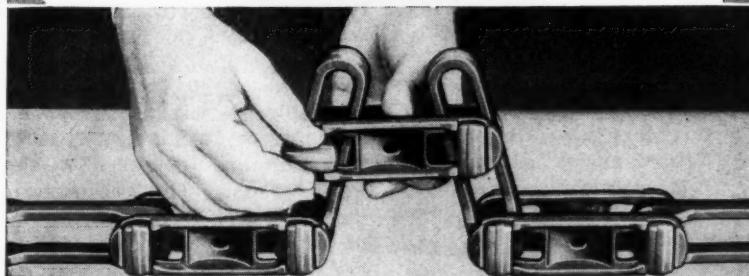
Jersey City Battlefront

COMPETITION among warehouses in the New York harbor area is likely to increase significantly in the near future. On February 14, in announcing a plan for the New Jersey waterfront, the Port of New York Authority implied that there was insufficient development of that waterfront as a marine terminal, and that the railroads have been using the area for trans-shipment of freight by lighter, carfloat, etc. to the New York harbor area, with little use of connecting trackage to ship terminal and industrial sites. The Foundation Co. of New York came out on March 1 with a proposal to the mayor and the Board of Commissioners of Jersey City offering to develop a rail and ship terminal with industrial area. It would include warehousing facilities.

In the light of this development there appears to be little doubt that the plan envisioned by the Port of New York Authority will have to be revised or reconsidered. However, there are other factors which may be of even greater significance. Any development of new warehousing facilities at the present time is of vital concern to warehousemen in the metropolitan area. While it is not known if the proposed private plan envisions freezers and coolers in its "warehouse," and while the private proposal states that "private capital can be profitably invested in marine terminals and warehouses on the Jersey City waterfront for proper classifications of freight and direct transfer between railroads and ships," any new capacity (especially when provided with excellent rail connections) will be carefully studied by warehouse executives.

Executives will no doubt take into consideration the fact that this section of the metropolitan New York waterfront and its adjacent area contains two of the largest warehouses in the East: Lackawanna and Harborside. Another consideration is that the two railroads involved in the proposal by The Foundation Co. are not transcontinental or major trunk line railroads but are strictly eastern seaboard.

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PERILS OF THE SEA

(Continued from page 25)

venture of the kind you just mentioned requires the use of a bill of lading."

"Well, then," observed Cooper, "to the shipper a bill of lading evidently is a very important document."

"It sure is," exclaimed McCormack. "To a large extent the terms of a bill of lading determine the sort of marine risks on which insurance should be taken out. The shipper also ought to give thought to factors other than purely marine risks. Here's an example of where the consignor should have had some form of insurance on the difference between actual and released valuation."

McCormack went on to tell of a shipment of animal skins which were damaged while in transit from Europe to the United States. The shipper filed a claim based on the full value per 100 lbs. The steamship company refused to pay on the basis demanded, inasmuch as the packages had been shipped at released valuation as specified in the bill of lading under a clause which read: "Each package shipped hereunder does not exceed \$100 . . . on which basis the freight is adjusted, and the carrier's liability shall in no case exceed the sum unless a value in excess thereof be specially declared and stated thereon, and extra freight as may be agreed on paid." The shipper brought suit. The court ruled that the valuation clause in the bill of lading governed the dealings and declared in favor of the carrier. In its decision the court also referred to cases 241 US 544 and 255 US 317 in which the clause had been upheld.³

Where a "released value" is involved, it means that a shipper, in order to obtain a lower freight rate, agrees to release a carrier from full liability if loss and/or damage arises to the goods while in transit. Where such occurs, the shipper can obtain for loss or damage no more than the amount specified in the bill of lading, irrespective of the actual value. For this reason, the shipper should obtain insurance on the basis of

actual or 'full' value. He can then collect from the insurance company.

"It is not insurance alone which is needed. Good common sense is indispensable," chuckled McCormack. "Note this situation, where a shipper failed to observe that a bill of lading, once issued, can be changed only by a written contract."

McCormack then told of a packer who shipped salt fish from an Atlantic port via an intercoastal steamship line to a port on the Pacific Coast. The consignment was to be under refrigeration while on ship. However, prior to loading the shipper was informed that the ship's refrigeration system was in bad order and could not be used for that particular voyage. When the bill of lading was handed to the shipper it contained the clause "cool stowage, not refrigeration." The shipper did not protest, but accepted the document as tendered to him. Later the shipper had a conversation with a solicitor of the steamship company, who informed the shipper that the fish really would be handled under refrigeration. For all that, the bill of lading was not altered, nor was any amendment made in writing. Eventually a law-suit came up. The court held that the verbal statement made by the steamship representative to the shipper was not binding.⁴

McCormack next spoke of a shipment of perishable goods which arrived at a U. S. port on March 24. Damage to a portion of the consignment was noted as the goods were being unloaded. On March 25 the shipper filed a claim with the steamship company, and fol-

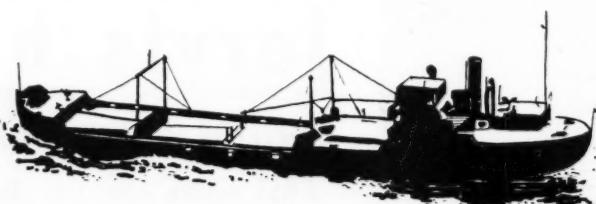
lowed with a court suit (libel) on June 29. The court held in favor of the carrier denying the suit because the bill of lading contained this clause: "The carrier shall not be liable for any claim whatsoever unless written notice thereof shall be given to the carrier before removal of the goods from the wharf. No suit to recover for loss or damage shall in any event be maintainable against the carrier unless instituted within three months after the giving of written notice as above provided. No agent or employee shall have authority to waive any of the requirements of this clause."⁵ McCormack added: "So you see, Harry, a shipper can lose money merely by ignoring the terms of a bill of lading."

"Probably there are numerous other legal pitfalls into which a shipper can slip," Cooper mused.

"And how!" McCormack answered. "To give you an idea, I'll refer to an incident wherein a shipper booked space on a ship for 50,000 drums of kerosene. The contract specified 'expected time of loading late March/early April.' Actually, the ship was unable to take the cargo until the middle of April. The shipper attempted to void the contract for cargo space. On the grounds that such cancellation would make it impossible for the ship to sail with a full cargo, the steamship company filed suit against the shipper. The court ruled in favor of the steamship organization, stating that 'expected time of loading' had not bound the carrier as it would have if a definite date had been named."⁶

"Or take the affair of the purloined delivery order," said Mc-

(Continued on page 64)



BRASS

(Continued from page 49)

bears on commerce, since it is eventually spent to improve navigation and to protect commerce against floods.

At Vicksburg the Corps of Engineers has one of its most interesting civil works, The Waterways Experiment Station, which comes under the supervision of the MRC. It was established as a hydraulic laboratory, and it pioneered in the work of establishing small-scale models of the principal waterways of the nation. It is the largest laboratory of its kind in the world. In addition to experimental hydraulics it conducts equally important experiments in soil mechanics, concrete, and in the techniques of operation of a research center.

The experiment station consists of two reservations: 500 acres at Vicksburg, 820 acres at nearby Clinton, Miss. At the Clinton reservation the engineers are now working on a scale model embracing 45 percent of the waterways

of the nation. It will cover an area of 200 acres. These models are sometimes built in the open, sometimes under shelter. Through these models, the habits of a waterway under all possible conditions may be observed. The models include dams, spillways, outlet works, sluices, control gates, high pressure valves, locks, pumps, boats, sewers, surge tanks, breakwaters, harbor works, and facilities for observing the action of the tides, waves and currents. The models enable observers to study hazards stemming from navigational velocities and low water.

The Mississippi River Basin model—largest hydraulic model in the world—will cost \$6,000,000. It will reproduce 1,250,000 sq. mi. of the prototype drainage basin and will cover more than 200 acres. It has been designed to be operated as a complete unit or in part, for the study of local problems. Students of waterways in all parts of

the world are watching this undertaking with keen interest.

At Vicksburg the S.S. Mississippi turned around and headed back to Memphis. Your correspondent was taken by automobile to Baton Rouge. The trip through the Atchafalaya waterways off the main stem of the Mississippi was an interesting excursion into the 'Cajun area. It is hoped that further improvements of the Atchafalaya water courses will bring the wealth of the Louisiana interior into the arteries of world distribution. The region has many resources now neglected. The products most easily taken out of the Atchafalaya at this time are sugar, Spanish moss, lumber, oil, furs and various agricultural materials. The water course is still so filled with snags, and at places is so shallow, that the S.S. Newton, on which I travelled during this leg of the journey, often was compelled to dawdle along at virtually nothing per hour. Later on the second day, the Newton entered the Intra-Coastal Canal and we headed toward New Orleans.

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PROGRESSIVE PORTS



. . . CHICAGO

Port cities in the Great Lakes area have been quick to respond to renewed interest in iron ore sources close to the St. Lawrence and to heavier inland waterways traffic. Chicago is in the forefront with a plan for an overall port authority to keep abreast of developments.

ABILL before the Illinois General Assembly is the first step in the direction of a Chicago over-all port authority. The proposal, put into the hopper by Senator Butler of Chicago, would affect the control and establishment of local port authorities and would, in return, make state grants available in amounts equal to local funds. The commission, if established according to the proposal, could investigate, relocate tunnels or other utilities in connection with navigable waterways; remove obstructions; and issue permits for structures. Local authorities could be set up, under certain conditions, which would exercise the right of eminent domain, acquire property, plan improvements, etc.

Financing would be by bond issue by the respective local bodies. These issues would require voter approval and would incur interest not exceeding five per cent. The measure's sponsor hopes his bill will have better fortune than the 1933 bill, which failed of passage despite three years research made under the sponsorship of the Illinois and Indiana legislatures.

At the annual meeting of the Propeller Club of Chicago, held last month, several speakers denounced the past record of Chicago in failing to do enough to bring the metropolis to its proper position as a port city. Martin Oettershagen, engineer, thought that a local set-up

was preferable for a port authority, but was willing to go along with a state-wide proposition, such as that of Sen. Butler. Mr. Oettershagen ascribed part of the failure to do anything to the fact that too many government and private bodies wanted to have their "say so" and that "not one of these has taken upon itself to assume the responsibility to see to it that something is accomplished."

The new enthusiasm to lift Chicago out of the doldrums may be ascribed in part to the new thinking that has emerged over the St. Lawrence Waterway. While such a project might not, as some enthusiasts believe, make Chicago the greatest inland port in the world, it would undoubtedly increase traffic through that city, increase waterfront values, and rebound to the benefit of inland waterways transportation on the Mississippi River System. The ramifications of a St. Lawrence project are enormous.

It is noted that many important shipping and industrial leaders have recently come out in favor of the project, and this has given a filip to planning by Milwaukee and other Great Lakes cities. After bitterly opposing the proposed St. Lawrence Seaway project for more than 25 years, the Lake Carriers' Assn., composed of vessel operators on the Great Lakes, has declared itself neutral in the controversy over the project.

John T. Hutchinson, president, made the announcement after a recent board meeting in Cleveland. He said, "The board's action was taken because of the divergent views expressed by the association's members. For many years the association has actively opposed construction of the St. Lawrence project and many of our member companies are still in opposition.

"However, within recent weeks other member companies have expressed themselves in favor of it. Accordingly, we are adopting a position neither opposing nor favoring the St. Lawrence Seaway and Power Project with respect to its board economic aspects. The association, however, will continue to assert an interest in the technical phases of the navigation facilities."

The group whose members represent 26 fleets and 95 percent of the carriers of United States registry transporting dry bulk cargo on the Lakes, at the last Congress opposed the project on the grounds that the proposed tolls would reverse the national policies of the U. S. and Canada on toll-free use of inland waters, and fail by millions of dollars to make the project self-liquidating.

Late in 1948 (November) the M. A. Hanna Co., Cleveland ore, coal, and shipping firm, announced it had changed its attitude and now favored the canal. This company is spending millions of dollars devel-

oping iron ore deposits in Quebec and Labrador. A short time later, Charles M. White, president of the Republic Steel Corp., also indorsed the seaway. Among opponents in the Lake shipping group is Alexander C. Brown, president of the Cleveland-Cliffs Iron Co., who recently expressed fear that admission of "cheap ocean-borne iron ore" through the St. Lawrence would discourage the development of the Lake Superior iron ore program and demoralize lakes shipping. Another factor, in this connection, is the new political completion of some affected states, notably Illinois. Adlai Stevenson's advent as governor and as Democrat should have important reverberations from Washington—and that's the place where there's an awful lot of money.

Another important factor that will have its influence is the general economic situation here in the U. S. Some legislators, state and federal, may feel that this is just the time to initiate big projects, since they would funnel additional sums into consumer channels via construction activity. Lastly, there

are the defense requirements of the country and the very close cooperation which exists between the U. S. and Canada. The latter would have a very appreciable benefit from a St. Lawrence able to accommodate ocean vessels from its mouth to the northern shores of Lake Superior.

A few figures will serve to show what may be in store for southern Canada and the northeastern U. S. There are several thousand miles of lake and river front affected di-

rectly by this project. Great industrial centers fringe the Lakes. Many millions of tons of iron ore and other products are carried annually. Also important, the new ore areas recently discovered in Labrador and Quebec will certainly play an important role in determining when the St. Lawrence will flow "unvexed to the Sea" and when Chicago and other forward-looking cities take their rightful places among the great ports of the world.

Total traffic on all inland waterways in 1948 was close to five hundred million tons, of which about 143 million tons was carried by barges on the Mississippi River. It is expected that this last figure will be from 15 to 20 percent higher this year. Part of the progress of inland waterways shipping may be laid to the fact that the industry is well organized. Part of it may be laid to the fact that much of the land drained by navigable inland waterways is west of the Mississippi proper. This area has become a great durable goods producer. This type of merchandise frequently lends itself to shipment by barge, in contrast with perishables.

Roll-Handling Truck

Ironbound Box & Lumber Co., Hillside, N. J., announces a new truck designed to handle paper rolls, barrels, drums, kegs and similar items. Capacity is 2,000 lbs. The new model RolTruck is made primarily for handling rolls uniform in width. It is available in three standard cradle widths: for rolls up to 22, 32 and 40 in. wide. It is claimed by the company that the truck speeds loading in that it provides a means of rapid centering of product between the wheels. Load-holding arm is locked around the load by a few turns of the locking handle. The unit has offset wheels. Fenders over the wheels are said to prevent interference from the roll. Six- or eight-in. front wheels are available, and are semi-steel, molded plastic or rubber tired. They are equipped with Hyatt bearings. The cradle is heavy rolled steel plate.

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TRIMMING OCEAN TRANSPORT COSTS

(Continued from page 23)

ing gangs. Unfortunately, however, at the present time there are not enough modern ports able to accommodate such loading or unloading operations. But the lines feel they are moving in the right direction.

Detailed cost studies, together with engineering advances, are credited with effecting current fuel efficiency. These studies are nearly 100 percent better than they were a few years ago. This has helped considerably to offset increased fuel-per-barrel costs.

Although faced by union objections to certain technical advances in cargo handling, various lines are developing pallet handling and pre-packaging methods that lead to more economical handling and greater protection. Storage methods, both aboard ship and at wharfs and terminals, are being improved—to no small extent on the basis of cost study findings.

Steamship companies create certain accounting and control problems for themselves through some of the special services they offer distributors. For instance, in their 'split pick-up' and 'split delivery' operations, they provide an unusually comprehensive commodity collection and delivery service.

In coastal shipping, a line taking on a carload in Boston or New York often makes a split delivery on the West Coast. This means that

a carload of one type of merchandise or of a mixed lot may have to be fanned out to a half-dozen ports. Or the 'split pick-up' may apply. This means assembling a carload lot from a half-dozen points (and sometimes at two or more ports) for delivery to possibly an equal number of destinations.

Beyond the obvious accounting control elements demanded for the efficient operation of such services, there are others which might be termed purely 'distributive controls.' Materials or merchandise thus serviced receive special handling at the receiving terminal; they must be stowed aboard the ship in such a way that parts of the consignment may be moved out with a minimum of extra cargo movement; and they must be properly arranged at the receiving dock or terminal.

In some instances much of the detail is handled by consolidators (freight forwarding companies). But even when it is, the steamship line has a good deal of paper work, for its own part of the operation extends beyond the mere movement of goods from port of call to port of discharge.

With ship movement speeded and with wharf and harborside terminal costs higher, the vessels, especially those of the coastal lines, are not the "floating warehouses"

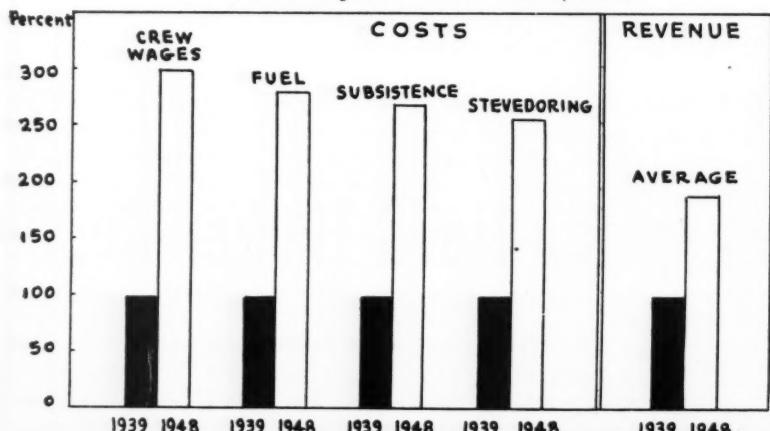
they used to be. The time has passed when a manufacturer or distributor could get "free storage" by putting his goods to sea. No longer can he count on 30 or more days' free wharf storage at each end of the trip, plus 30 or more days en route from one coast to the other.

But today, as increased production leads to heavier inventories, shippers are again taking into consideration certain storage factors inherent in the movement of goods by waterways and over the sea. There's still free time dockside—usually five to seven days at either end—and even with today's 14- to 17-knot freighters there are sometimes more than 18 days at sea.

"Moving inventories" are well illustrated by the activities of the lumber manufacturers and distributors. More frequently than not they ship from one coast to the other before a sale has taken place. But while the cargo is on the way the sales campaign is initiated, and 18 or 20 days later the lumber is handed over to customers at the receiving pier as fast as it is unloaded.

In this "warehousing" activity the steamship lines can provide one of the differentials that make their facilities attractive to shippers. Because of this the lines now give careful study to factors such as this, as a means for providing extra inducements to shippers.

**OPERATIONAL COSTS and REVENUE
INTERCOASTAL OPERATION
(1948 figures as of December)**



Perfect Shipping Month

Loss and damage claims now being paid by railroads amount to over \$125 million a year. This loss comes out of the pockets of everybody. Some of it is due to inefficient packing, but much of it results from rough handling of cars in switching or from dropping of goods in transit. The shipper is often responsible because he uses inefficient packaging. No matter who is primarily, or largely, responsible, there must be cooperation by all to cut this severe economic loss.

The railroads have designated April, 1949, as "Perfect Shipping Month," and have earnestly solicited general cooperation to promote this slogan and reduce losses. This objective is being promoted by numerous concerns, one of whom (Robert Gair Co.) has been active in promoting the campaign. As this company indicates in its release on the subject, the battle to reduce shipping losses must go on, not only in April, but throughout the year.

FIELD

(Continued from page 31)

provides other services equally important. In addition to enabling a manufacturer, processor or distributor to carry a sufficient stock of raw and finished goods with a minimum tie-up of needed working capital, it is being used for credit protection purposes and for inventory control. Where a manufacturer or processor is concerned about the financial stability of certain distributors yet is anxious to ship them goods in sizable quantities, a field warehouse established on the premises of the distributor is often the solution. In such instances, the manufacturer or processor ships the merchandise to the field warehouse with instructions to issue warehouse receipts in his own name. No releases from warehouse are made without the authorization of the warehouse receipt holder, and in the event of financial difficulties (or for other reasons) on the part of the distributor, demand may be made on the warehouseman for immediate delivery of the goods held on warehouse receipt to the holder of such receipt. In this manner the manufacturer or processor is able to continue business with his distributors, yet places himself in the position of a preferred creditor in the event of insolvency. A two-fold purpose is served: the manufacturer or processor's chance of loss is greatly lessened and the distributor has ready access to goods needed for consumer demand.

Those manufacturing or processing industries which of necessity must carry sizable stocks of raw materials, find that the use of field warehouse receipt financing is of considerable value. The major portion of the funds tied up in such materials can be regained for profitable use. It is a "fluid" credit arrangement; the borrowed funds, in most cases, are repaid as the merchandise is needed and withdrawn from the warehouse. The bank or lending institution advancing the funds against the warehouse receipts is usually the depository of the borrower. Such loans are considered secured loans and the interest rates are reasonable.

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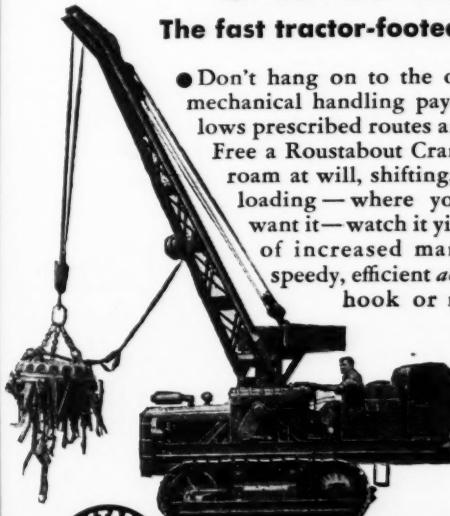
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PERILS OF THE SEA

(Continued from page 58)

Cormack. "Ten cases of valuable skins arrived at New York by steamer. The owner retained a customs broker to handle entry and delivery. The broker filed the proper papers at the custom house and made arrangements for a reliable local trucker to pick up the goods at the pier. At the same time the broker wrote a letter to the steamship company instructing delivery to 'our truckman.' He did not indicate the truckman's name or address. At the office of the trucker the letter was placed in an unlocked desk drawer. The letter disappeared from the desk. Later it was presented by a truck driver to the steamship company's delivery clerk, who surrendered the shipment. It developed that delivery had been made to a person unknown to the owner or the broker. All trace of the articles was lost. The owner then filed suit against the steamship company. The court upheld the company in that its delivery clerk could not be expected to demand further proof of ownership than the letter of instruction which had been tendered after legal clearance of the shipment through the custom house."⁷

"Isn't it true that most of the illustrations you've given do not describe actual marine risks or perils of the sea?" Cooper inquired.

"Granted," acknowledged McCormack, "but there are so many angles to shipping via water-borne carriers that I wanted to give you an idea of the importance of the whole subject. Now as to marine risks. On one occasion a shipment of cocoanut oil was damaged while enroute by steamship from Ceylon to the U. S. The damage was caused by sea water running through the ship's ventilators, which had been smashed enroute by waves. In a suit filed by the shipper the court ruled for the carrier because the loss had been due to a 'peril of the sea.'"⁸

"Just where do 'perils of the sea' apply?" inquired Cooper.

"'Perils of the sea' apply where casualties result from the violent action of the elements.⁹ In this country the decisions are to the

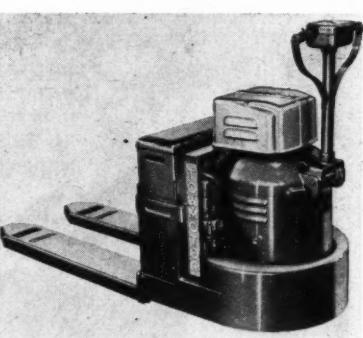
effect that damage to a cargo by sea water is caused by a 'peril of the sea,' within the meaning of that term in a contract of affreightment,^{*} when the cause of the entrance of the water was not the unseaworthiness of the ship, the negligence of the captain or crew, or the ordinary wear and tear on the ship."¹⁰

"It seems to me that proof of liability is of considerable consequence in these issues," commented Cooper.

"That's just it," exclaimed McCormack. "Here's a case in point. A shipment of onions was going from Spain to the United States. Upon discharge, part of the onions had to be destroyed because of their condition. The shipper filed suit for damage. The steamship company produced evidence showing that due care had been taken in loading and unloading, and during transit.

The words 'due care' or 'due diligence' will be found in the bills of lading of waterborne carriers. They refer to the fact that the ship's operators will provide proper, fit, and appropriate or suitable care as required by the circumstances. The shipper was unable to prove negligence on the part of the ship's owner. The court dismissed the suit in favor of the

* Contracting for a vessel, or for space thereon, for the carriage of freight.



Towmotor Corp., Cleveland, offers a battery-powered hand pallet truck which, it is stated, incorporates novel and improved features. These include automatic power cut-off, rapid lift, easy maneuverability, three-point suspension on uneven surfaces, and differential action trailer wheels which eliminate scuffing.

carrier.¹¹ Another shipper forwarded a consignment of flour from the United States to Argentine. The ship was also carrying 70 drums of sulphuric acid. During the voyage some of the drums were found to be leaking. They were thrown overboard, but not before considerable damage had been done to the flour. The flour shipper filed suit in court, but lost because the evidence did not show negligence by the steamship company or the master of the vessel."¹²

"Look here, Jack!" cried Cooper, "do the owners of vessels always escape liability?"

McCormack smiled. "I didn't mean to give you that impression. I'm trying to accentuate the need for careful insurance planning. Naturally, owners of vessels are not always in the right. I know of a shipper who loaded a cargo into a barge which sank for no perceptible reason shortly after being loaded. The shipper filed suit against the barge owner for loss of the cargo. The court found in favor of the shipper. The owner of the barge could not conclusively prove that the barge had been seaworthy. Among other things the court said: 'Law raises presumption of unseaworthiness of vessel when she sinks without any known reason.'¹³

"Should the shipper include the amount of freight charges when taking out insurance?" queried Cooper.

"By all means," McCormack answered, "otherwise he may suffer a loss. A carrier can require payment of freight irrespective of loss. I'll cite an example. A shipment from Haiti to New Orleans was lost in a fire at sea which entirely destroyed ship and cargo. There was a suit to recover freight money. The court ruled that the steamship company was entitled to the freight charges despite the loss of the shipment in question."¹⁴

"And losses by fire," McCormack went on to say, "create some strange situations. I recollect a case where a shipper was forwarding 2,852 beds. The whole shipment had been delivered to the pier and a receipt, but not a bill of lading, had been given to the shipper. After about half the shipment had been loaded, a fire broke

out on the wharf. The remaining beds were destroyed. The fire had broken out through no fault of the ship owner. The bill of lading was not issued until *after* the fire. It had a clause in it absolving the steamship company in case of fire, and the carrier would not pay for the loss of the beds. The shipper took the case to court, but lost out. The court held that the shipper was expected to know the terms and conditions of the ocean bill of lading notwithstanding it had been issued after the fire."¹⁵

"Events pertaining to marine risks and related losses seem to be limitless," said Cooper, "I understand why you warn against neglect."

"Exactly," McCormack said, "and that's the reason I tried to give you a cross-section view. It would be impossible to include every contingency. Still, there's another thing to which shippers should be alert. I refer to conditions caused by strikes. A shipment of baled cotton was delivered to a steamship company in the United States to be delivered to Germany. While the steamer was being loaded certain repairs were made. During the repair work a strike of machinists took place and sailing was delayed. The delay ultimately caused the shipper to face a price drop, and he filed suit against the shipping company for damages. The court ruled in favor of the shipping company on the ground that the bill of lading specified that the owner of the ship was not responsible for loss, damage or delay caused by strikes."¹⁶

EXPLANATION OF REFERENCE MARKS

Numbered symbols used in this article refer to citations from court cases as indicated.

¹ See 47 Fed. (2d) 213.

² See 36 Fed. (2d) 889.

³ See 31 Fed. (2d) 257.

⁴ See 261 Pac. 729.

⁵ See 30 Fed. (2d) 676.

⁶ See 32 Fed. (2d) 969.

⁷ See 23 Fed. (2d) 667.

⁸ See 35 Fed. (2d) 184.

⁹ See 74 Fed. 413.

¹⁰ See 15 Ann. Cas. 750, 212 U.S. 354.

¹¹ See 31 Fed. (2d) 262.

¹² See 26 Fed. (2d) 827.

¹³ See 33 Fed. (2d) 655.

¹⁴ See 26 Fed. (2d) 967.

¹⁵ See 24 Fed. (2d) 704.

¹⁶ See 33 Fed. (2d) 288.



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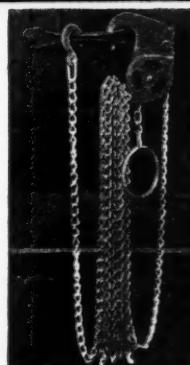
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COLD STORAGE

(Continued from page 56)

their storage spaces, where they are neatly piled.

To make further savings in time and labor there are one-ton trailers on which the pallets are placed. The trailers are then coupled together and towed by tractors. Often as many as 25 of these tow trucks are coupled together. It is estimated that since the installation of this method of moving merchandise, there has been a saving of 30 percent over any previous method used—other than that indicated above.

MERCHANTS has another large warehouse in Buffalo, and merchandise is often transferred from one warehouse to the other. The same method of loading pallets is used: placing them loaded on the trucks and delivering them at the other warehouse. As the equipment at both buildings is the same this system is very satisfactory, and again saves time and labor. This method is never attempted, how-

ever, for more distant hauling; merchandise on the pallets does not pack to good advantage.

There is a 100-car private siding of the Lehigh Valley Railroad beside the Merchants waterfront warehouse, with free switching allowed for all railroads entering Buffalo. It is thus possible for any line to load or unload there. There is a deep-water dock convenient for shipping through the New York State Barge Canal, the St. Lawrence River and the Great Lakes to and from Canada, New England or the midwest. There is also a platform space for 20 trucks and generous yard storage for waiting or parking vehicles.

Since the removal of the Poker Fleet from the Great Lakes, about the only package freight coming into Buffalo is frozen fish and blueberries from Newfoundland. Small refrigerated boats, of some 300-ton capacity each, bring in fish during the months of lake navigation and

berries while they are in season. They then return with frozen meats and meat products. During the winter months these boats continue to ply along the Atlantic coast, bringing the frozen fish from the north and returning with frozen meat products from Boston and other Atlantic ports.

The unloading of these boats follows a definite system. Merchandise is placed on pallets in the vessel's hold and is lifted by crane and a bridle sling to the dock, where the pallets are placed on four-wheel trucks. These are coupled together and removed by tractors to refrigerated rooms in the warehouse. The same method, in reverse, is employed for loading the meat products into the hold for the return voyage. These boats, which arrive about every 30 days, are unloaded and loaded at the rate of 30 tons an hour.

Commodities

The patrons of this warehouse are the chain markets, flour mills, makers of dairy products, frozen food packers and canners of fresh fruits and vegetables. Buffalo is in the heart of a vast fruit growing belt and during the season over one million lbs. of processed strawberries alone come into the warehouse for refrigeration, storage and distribution. Merchandise comes in from all over the United States by railroad and truck—grapes from California, carrots from the Midwest, and poultry and meats. From 300 to 400 tons of perishable and dry merchandise move in and out of the warehouse daily. Forty men in addition to office help are employed in the warehouse. There is never a "slack" time. While more merchandise comes in during the spring and summer, there are always heavy outgoing movements during the fall and winter.

As for a return of package freight on the Great Lakes, some consider it possible, but it must be under different conditions. Boats must be larger and faster. They must have better refrigeration, loading and unloading facilities. In addition, labor costs and general overhead have to be cut if shipping by package freighter is to return to its pre-war position here.

SEA-AIR

(Continued from page 47)

tation of the laws. Even under the Panama Canal Act, which has been considered as establishing a policy of carrier separation and competition, railroads are permitted to acquire and operate steamship lines and motor carrier services, and steamship lines are permitted to operate motor carrier services. Nor is there anything to prevent an airline from operating steamships.

Water carriers, therefore, may at least take hope in the realization that they face no insurmountable policy barriers. What they do face is the responsibility of proving that the best interests of the national transportation policy will be served through their entrance into the field of air transportation.

There is no question about the future growth of air transportation. But that growth must be guided. The public must be provided with efficient, reliable service at the lowest cost consistent with

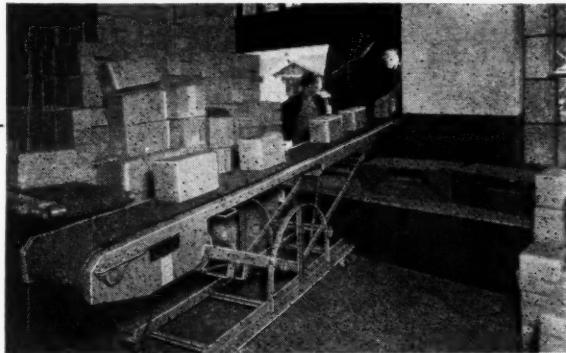
the requirements of furnishing such service. This is the heart of the matter. Upon the water carrier's ability to satisfy this condition hinges its emergence as an air carrier. The nation's commercial needs, the nation's defense needs, require that the air carriers, *whoever* they are, provide such service. The defense agencies claim that the country needs at least 8,000 planes in addition to those regularly used by the Army and Navy. The present certificated airlines in both domestic and foreign service are using about 1,000 planes, the non-certificated carriers between 200 and 300. This is the extent of our commercial fleet. How can it be expanded? Who is best suited to sell enough air transportation to keep a peacetime air fleet up to emergency strength? This is one of the sub-questions that will have to be answered before water carriers become air carriers.

Coming Events

- April 1-5 — Annual Convention of Local Cartage National Conference, Miami, Fla.
- Apr. 10-14—17th Annual Convention, Mayflower Warehousemen's Assn., Buccaneer Hotel, Galveston, Texas.
- Apr. 25-28—28th Annual Convention, National Retail Dry Goods Association's Traffic Group, Copley Plaza Hotel, Boston.
- May 9-11—Annual Spring Meetings, National Committee on Accounting, Council of Safety Supervisors, and National Committee on Street and Highway Safety, American Trucking Assns., Melbourne and Sheraton Hotels, St. Louis.
- May 10-13—18th Annual Exposition, American Management Assn. Packaging Exposition, Atlantic City.
- May 23-25—14th Annual International Distribution Congress of the National Federation of Sales Executives, Stevens Hotel, Chicago.
- May 30-June 1—American Trucking Associations, Inc. Conference, Cosmopolitan Hotel, Denver.
- June 1-3—Joint Spring Meeting, four materials handling associations:
Assn. of Lift Truck & Portable Elevator Mfrs., Caster and Floor Truck Mfrs. Assn., Electric Industrial Truck Assn., and Material Handling Institute, Grove Park Inn, Asheville, N. C.
- June 1-3 — The 1949 President's Highway Safety Conference, Departmental Auditorium, 18th and C Sts., Washington, D. C.
- June 20—Joint Industry Meeting of the Household Goods Carriers Conference, Sheraton Hotel, Chicago, Ill. Group sessions by various companies will follow, beginning June 23, at the Sheraton Hotel. However, Allied Van Lines will begin its meeting at the Edgewater Beach Hotel, June 23-25.
- August 9-12—2nd Annual Western Packaging Exposition, Civic Auditorium, San Francisco.
- October 4-7—4th Annual Industrial Packaging and Materials Handling Exposition, Convention Hall, Detroit.
- Oct. 21-26—American Trucking Assns., Inc., annual convention, Statler Hotel, Boston.
- Jan. 31-Feb. 3, 1950—American Warehousemen's Association, Edgewater Beach Hotel, Chicago.

Purdue University Conference

Active questioning and a high degree of response by the audience marked the Materials Handling Conference at Lafayette, Indiana, Feb. 21-22. Preceding the addresses, Lloyd Backart, who represented the Board of Directors of the Material Handling Institute, Inc., and the Caster and Floor Truck Mfrs. Assn., gave a keynote address on "Management Looks at Material Handling." This conference was sponsored by the Department of General Engineering and the Technical Extension Division of Purdue University, in cooperation with the Material Handling Institute and the Indiana and Midwest Materials Handling Societies.



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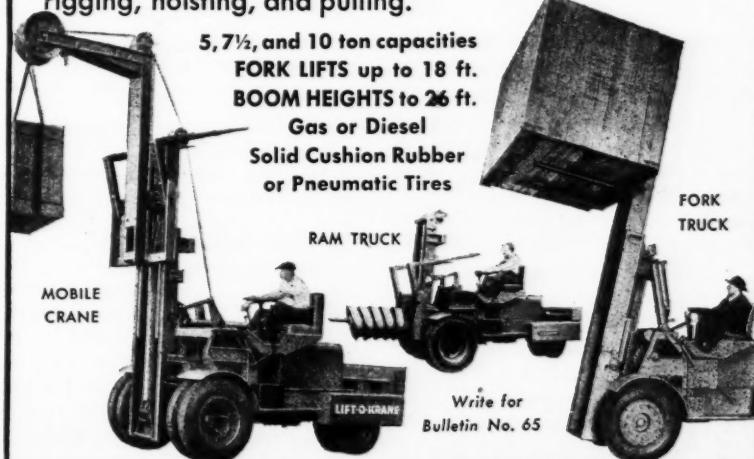
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ASTT QUIZ



A sampling of the first examination questions used by the American Society of Traffic and Transportation are presented below. They are excellent guides to the type of question which may be expected in subsequent examinations for professional status in the field of traffic management, particularly with respect to the examinations scheduled for June 8, 9 and 10, to be held in various cities. For further information write E. Breisacher, P.O. Box 2128, Middle City Station, Philadelphia 3.

EXAMINATION No. 1

Transportation Economics or Business

(Answer any TEN questions)

1. Trace with some care the evolution of inland transportation in the United States, 1800 to date, emphasizing the relationship of changes to both the location of productive enterprise and the volume of production.

2. Explain clearly why the railway business is recognized as one of decreasing cost and compare with the railway business in this particular pipeline, water, and truck transportation.

3. The Federal government faced no constitutional obstacle in establishing regulatory control of commercial highway transport, but like attempts of the states were blocked for some years; the states finally succeeded, however. Discuss at moderate length, explaining clearly *why* in each case.

4. Trace from 1887 to date changes in Section 4 of the Interstate Commerce Act, commenting upon any significant court decisions, relation thereto.

5. Enumerate important powers now possessed by the Interstate Commerce Commission over railways under Part I of the Interstate Commerce Act as that Act now stands.

6. State powers over commercial highway transportation exercised by the Interstate Commerce Commission under the Motor Carrier Act of 1935 and note any weakness you believe exists in the law or its administration.

7. "In view of the extent and intensity of competition that now

exists in the field of domestic transportation, public regulation should be abandoned." Give your position relative to this statement and justify that position at some length.

8. Discuss the Civil Aeronautics Act of 1938 as to:

(a) Major provisions, (b) progress of commercial air transport thereunder, (c) your judgment as to the soundness of administration of the Act.

9. "Any movement toward rigid distance scales of rates is objectionable from the points of view of both carrier and shipper." Discuss, pro or con, at some length.

10. State clearly the goals that should be attained in the course of the receivership (trusteeship) and reorganization of a railway and discuss the general policy of the Interstate Commerce Commission during recent years with respect to recapitalization plans of railways undergoing reorganization.

11. Set forth clearly the provisions of the Railway Labor Act of 1934 under which all railway labor disputes are now progressed, com-

menting upon the operation of the Act and indicating any changes you believe should be made.

12. "The railways of the United States should be consolidated into a small number, perhaps 6-8, of essentially non-competing systems, with considerable abandonment of duplicating and branch-even secondary main-lines. Such consolidation would serve both public and carrier interest." Discuss, pro or con, at reasonable length.

13. Trace from 1877 (Munn vs. Illinois) changes in the line of demarcation between state and federal control of railway rates, citing pertinent court decisions and any legislation significant thereto.

EXAMINATION No. 2

The Principles of Traffic Management

1. Define traffic management. Distinguish between an industrial and a commercial traffic manager. List some arguments for traffic management in a business concern.

2. You are asked to set up a traffic department in a large industry. Outline at least five general duties you would assign to the traffic department. Indicate where you would place the traffic department in the general organization chart of the business.

3. The concern of which you are industrial traffic manager is preparing a procedure manual for the guidance and information of company employees. What material would you suggest be placed in the manual to cover the cooperative relationships between the traffic department and (1) the advertising

(Continued on page 72)

ATTENTION is called to Examination No. 3, particularly the section dealing with marketing functions. It is here, with reference to the integration of traffic and marketing activities, that many traffic men have shown weakness in the past. We suggest to readers that they be well grounded in the broader aspects of traffic work, including basic economics and the various phases of distribution as they affect the traffic function.

Hamstringing Coastwise Operations

A REPORT by the Marketing Facilities Branch of the U. S. Department of Agriculture puts the finger on why coastwise water carriers are hamstrung in trying to reestablish pre-war services. During 1948 these carriers—specifically those on Pacific and Atlantic runs—obtained rate increases which, percentagewise, were equal to those of other carriers, but “because much of their traffic is short haul in character they cannot compete favorably. Consequently, these services are now wholly inadequate, and the prospects for restoration of pre-war tonnages are very poor. Labor costs at ports have increased so much that operations are unprofitable.”

The report goes on to say: “During the past fiscal year activities in the maritime and waterways fields have been centered on the problem of reviving and developing adequate domestic water services in the coastwise, intercoastal, river, lake and canal trades in order that farmers and distributors of agricultural products and farm supplies may again have the advantage of differentially lower freight rates comparable with those in effect before the war. Many obstacles are still present which prevent full restoration of prewar domestic water services to their former place in the transportation economy of the Nation for the waterborne movement of farm products and supplies.

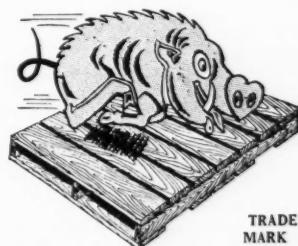
“ . . . several carriers holding certificates or permits issued by the Interstate Commerce Commission to engage in the transportation by water of commodities generally between ports along the Atlantic, Gulf of Mexico, and Pacific coasts, have endeavored to exercise the authority granted them by the Commission and re-establish their prewar services. Such endeavors of water carriers have met with varying degrees of success. . . . Services of carriers by water operating on lakes, rivers, and canals are generally adequate

for the movement of agricultural products and farm supplies. A different situation, however, exists with respect to Atlantic and Pacific coastwise service. With minor exceptions, none of the prewar steamship services in these trades has been reestablished, due to spiraling operating costs and the freight rate structures of competing surface carriers, and as a result shipping facilities for coastwise waterborne traffic between ports on the Atlantic and Pacific are wholly inadequate. Operations on a prewar scale cannot be anticipated until there is an improvement in the relationship between costs and revenues. It is not believed that the aforementioned increases in all-rail freight rates, which form a ceiling for water rates, will be sufficient to attract common carriers by water to restore their prewar services in the Atlantic and Pacific coastwise trades.”

Distribution Costs

The Department of Agriculture cannot be accused of partiality; it is interested in having a higher volume of produce and food shipped by the cheapest means possible. This benefits consumers, since it reduces the costs of distribution, which are unnecessarily high for many products. It is noted that rates were raised equally, but the raise is deceptive since it has only increased the disproportionate position of land carrier versus water

carrier. If, in addition, we add the fact that rail rates for certain waterborne products are keyed to repress competition from water carriers, the fact that labor costs are high on shipping routes must be regarded as the other side of the same coin. To put it simply, the coastal carriers are bedeviled by competitive rates on one side and labor costs on the other. And, in addition, they are frequently unable to obtain enough longer-haul freight for transportation.



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Getting down to Cases

By LEO T. PARKER
Legal Consultant

DURING the past few weeks the higher courts rendered several outstanding decisions affecting the legal rights and liabilities of carriers—land and water. These new decisions can be used advantageously to win unavoidable suits, and may assist readers to avoid expensive law cases.

Jury May Decide

Considerable discussion has arisen from time to time over the legal question: If a carrier attempts to avoid liability for damage to shipped goods on the plea that the goods were improperly packed, who decides the issue? In Krupsaw v. W. T. Cowan, Inc., 61 A. (2d) 624, a shipper sued the carrier for damage to furniture in transit. The higher court held that whether or not the furniture was poorly packed and thus damaged through fault of the shipper must be decided by the jury after listening to testimony presented by both the shipper and the carrier.

Limitation Clauses

It is well known that clauses which limit a carrier's liability for lost or destroyed goods are valid under certain well-defined circumstances. In Clubb v. Hetzel, 198 P. (2d) 142, the higher court held: A common carrier can limit its liability for loss of transported goods interstate only by compliance with the Interstate Commerce Act and with the rules and regulations of the ICC. If the carrier's tariffs are filed with and approved by the ICC, the shipper is obligated by clauses which limit the carrier's liability, even though the shipper had no knowledge of the limitation clauses.

This court also held that where the evidence shows that the carrier failed to comply with the Interstate Commerce Act or with rules adopted by the ICC, a limitation clause is void, and the shipper can recover full value of loss or of damaged goods irrespective of clauses intended by the carrier to limit its liability.

Presumption of Law

According to a recent higher court, circumstances may exist under which the court will presume negligence and liability of a carrier for loss or damage to shipped goods. In Sugar v. National, 81 N. E. (2d) 609, it was shown that merchandise when received by an interstate carrier was in good condition but when delivered it

was damaged. The higher court presumed that the damage was caused by negligence of the carrier.

Also, see American Writing Ink v. New York, 80 F. Supp. 694. This court held that a shipper assumed the risk and could not hold the common carrier liable for freezing of perishables. The evidence showed that the shipper consigned the merchandise in a season of the year when freezing was likely, and the carrier did not agree to heat the cars.

Charterer is Liable

All higher courts agree that it is the duty of a charterer to care for the vessel and to assume liability while it is under his control, and that he cannot delegate that duty to others. See Seaboard Corp. v. Moran Towing Corp., 154 Fed. (2d) 399. Here a charterer denied that it was liable for damage to the vessel, claiming that another company had loaded it "in an improper and uneven manner." The vessel leaked, capsized and dumped her cargo. The higher court held the charterer and the company which negligently loaded the vessel jointly liable.

Not Common Carrier

It is well known that a private carrier is not liable for loss of or damage to shipped merchandise unless the carrier was negligent. Recently, a higher court held that if a vessel is leased or chartered to transport merchandise, its owner is not a "common carrier" but a "private contract carrier." See Sawyer v. M. Levin & Co., Inc., 155 Fed. (2d) 48. A vessel was chartered to haul bananas. In subsequent litigation over damage to the cargo the higher court held the vessel owner not liable for any loss or damage to the cargo unless he was negligent.

Too Small

A recent higher court held that a vessel owner may be liable for negligence when he supplies a vessel too small for the job. In Diamond S. S. Transp. Co. v. Peoples Savings Bank & Trust Co., 152 Fed. (2d) 916, the higher court held that the owner of a vessel always impliedly warrants that the vessel has sufficient power, size and ability to perform the undertaken service, and that a failure in this respect is negligence for which the carrier, whether private or common, is liable.

Negligence Defined

Recently a higher court held that negligence is the omission to do something which a reasonable and prudent person or carrier would do under the same circumstances. Failure of a carrier to prove that it was not negligent is an admission that it was negligent. See Seaboard v. American Stevedores, 151 Fed. (2d) 846. A corporation owned a vessel which it chartered to the American. The vessel was then in good condition, but was in a damaged condition when returned. The higher court held the American liable because it failed to prove that the damage was not caused by its negligence.

Not Subject to Control

Recently a higher court held that a person or corporation which transports its own goods are neither "common carriers" nor "private carriers." Hence, such a person or corporation is not subject to regulations by the Public Utilities Commission. See Cooperative Committee v. Public Utilities Commission, 80 N. E. (2d) 159.

In this case the testimony showed these facts: The common carrier had a contract with a manufacturer under which the carrier furnished to the manufacturer crews to operate switching locomotives. These crews were under the supervision of the manufacturer and were paid by the carrier. The manufacturer paid the carrier all money paid as wages to the crews. The court held that the common carrier was not subject to regulations of the Public Utilities Commission with respect to such operations. In other words, with respect to these special services to the manufacturer, this common carrier was not a common carrier.

Not Arbitrary

Very frequently common carriers file tariffs with the ICC which are held by courts to be arbitrary, objectionable and void. It is important to know that a Federal Court recently held as follows: A tariff rule filed by a freight forwarder was held valid and not objectionable. It required shippers for overcharges to file claims within a two-year period. The court held that such a rule was beneficial because it tended to result in uniformity of treatment among the various shippers. See Sachs v. Universal Loading & Distributing Co., 78 F. Supp. 619.

Law of Bills of Lading

All higher courts agree that a bill of lading is a combination receipt and contract. It can be corrected on proof of a mutual mistake. It is evidence of a delivery to, and acceptance of, freight by a carrier. See *Hollis v. Rash*, 212 S. W. (2d) 110. Also, a carrier is not bound by weights recorded on a bill of lading, and the shipper is not bound by such notations if he produces evidence to show that the carrier in fact transported a different weight than that recorded on the bill of lading. *Continental Distributing Co. v. Reading Co.*, 168 F. (2d) 967. The same law is effective with respect to all other incorrect notations on a bill of lading. The court will correct same upon presentation of proper evidence.

Minds Must Meet

A common rule of law is this: No contract is valid unless the testimony shows that the "minds of the contracting parties met." In other words, mutual agreement of the parties is essential to a valid and enforceable contract. Hence, a carrier's responsibility for safe transportation of merchandise is dependent strictly upon the original intentions of carrier with respect to the shipper.

For example, in *Gardner v. Mid-Continent Grain Co.*, 168 F. (2d) 819, a Federal Court held: The fact that a carrier failed to transport goods with "reasonable" dispatch is only a breach of contract, and the right of the shipper to damages in such situation is limited to such damages as might have been contemplated by the carrier at the time it accepted the goods for transportation.

Therefore, contemplation of the carrier is of greater importance to the court, in rendering an opinion as to the rights of the shipper, than the original intentions of the shipper. Also, this court held that the amount of damages recoverable for delay in transportation is such as might reasonably have been contemplated by the parties at the time the contract was made.

Shipper Has Preference

An important point of law relates to the liability of a common carrier as a warehouseman. If the carrier acts as a warehouseman he is liable for loss or destruction of shipped goods only as result of negligence of its employees. If the carrier is liable as a common carrier it is liable as an insurer, except for losses caused by the shipper; inherent defects or quality of the merchandise; Act of God; and common enemy.

According to a late case, a warehouseman who transports merchandise is liable as a common carrier unless he proves positively that his responsibility definitely had shifted to that of a warehouseman. See *Vanderbilt v. Chelsen Fireproof Storage Warehouses*, 80 N. Y. S. (2d) 302. Here the higher court held that a warehouseman's liability for loss of goods and damage to goods either as a warehouseman or as a carrier, must

be measured by the rule of absolute liability of a carrier, rather than by the rule applicable to warehousemen, unless the warehouseman proves conclusively that he was acting as a warehouseman at the time the goods were lost or destroyed.

The owner turned over goods to a warehouse company in New York. They were to be stored until the owner asked for delivery at her house, which was in another state. The owner was required to sign a shipping order and bill of lading as consignor, and to pay the freight charges. The court held that the warehouseman was liable as a common carrier for loss of the goods.

Still another valuable point of law is that a warehouseman who acts as a common carrier cannot limit his liability for loss or destruction of goods. See *National Blouse Corp. v. Felson*, 79 N. Y. S. (2d) 765. A shipper was given a bill of lading which contained a clause fixing the maximum liability of common carrier for loss in transit. This court held that such a limitation clause is void unless the shipper is given a choice of rates depending on valuation of the goods. In other words, if the shipper is not given the choice or opportunity to pay a higher rate and have full coverage, the limitation clause is void.

OBITUARIES

George F. Becker, former president of the former Tooker Storage & Forwarding Co., on January 1.

George H. Coffin, founder and president of the Lightning Moving and Warehouse Co., Phoenix, Ariz., on December 27, 1948.

Frederick F. Dawson, 41, superintendent of cargo service for United Airlines, on February 3. (Vitkauskas)

Eliot Flint, 85, president and treasurer of the People's Storage Warehouse Co., January 28. (Vitkauskas)

L. Graham Hampton, 39, vice president in charge of operations of the North American Van Lines, Fort Wayne, Ind., February 3. (Kline)

Charles C. Hoff, former president of the George A. House Warehouse Company, Albany, N. Y., on February 16. (Toles)

Robert F. Jones, president and general manager of the U. S. Truck Co., Inc., February 3. (Vitkauskas)

Charles Kirschenbaum, 72, founder of Neptune Storage, New Rochelle, N. Y., February 19.

Dutch Traffic Institute

A new Netherlands Traffic Institute has been formed, which will include transport, public service and other groups. Among the topics to be analyzed include general economics, techniques, documentation and geography. A committee for nomenclature is in process of formation.

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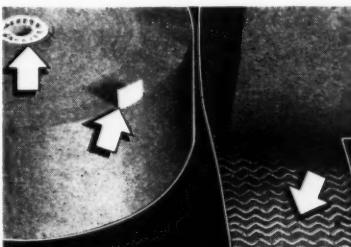
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ASTT

(Continued from page 68)

department, (2) purchasing department, and (3) accounting department?

4. What is freight classification? List elements entering into the making of such classifications. Outline the historical development of freight classifications. Distinguish between freight rates and freight ratings.

5. As traffic manager of a medium sized trade association, you are hiring a chief for your rate bureau or department. What should he know, in general, about (1) obtaining tariffs, (2) filing systems, (3) indexing plans?

6. What are the main duties of a receiving department? What equipment should a shipping department possess?

7. List some of the services a plant transportation department should perform for an industry. How would you suggest integrating it with the industry's traffic department? Define materials handling.

8. What is meant by expediting shipments? How would you organize for expediting during a war period? List the various types of claims.

9. As a traffic manager for a large department store, prepare a short memorandum for your superior on controlling the movements of local deliveries by truck.

10. What is a traffic counselor? Outline the relationship which should exist between the manager of a Chamber of Commerce Traffic Bureau and (1) Chamber members, (2) Transportation companies, and (3) the Chamber itself. What are some of the methods of payment for a traffic counselor?

EXAMINATION No. 3

General Business

1. The United States has been likened to an empire with a small, densely populated "center" devoted to business, finance and manufacturing, and large outlying areas devoted to the production of raw materials and serving as markets for manufactured goods. Elaborate on the above.

2. "As every practical business

man knows, conditions in the real world are frequently just the opposite of those which are pictured by the academic economist in his famous law of supply and demand. The economist says that the price of a commodity must rise if the demand increases and must fall if the demand decreases. But the business man knows from experience that an increase of demand can cause a decrease of price, and that a decrease of demand can cause an increase of price. The economist says that the price must fall if the supply increases and must rise if the supply decreases. But the business man knows from experience that an increase of supply can cause the price to rise and that a decrease of supply can cause the price to fall."

(a) State and explain the aca-



Equipment Mfg. Co., Detroit, offers what is claimed to be a new type of portable rack for stacking palletized materials. The rack comes for standard and heavy duty. It is stated that assembly and installation costs are far less than in similar rack systems; they can be quickly installed by spotting in place with fork trucks. No welding or cutting is necessary, according to the company, and rack levels are raised to accommodate high loads by removal of extension posts. Use of the racks is recommended in warehouses for the wholesale grocery, the hardware, department store and other trades.

demic economist's principle of supply and demand. (b) Carefully discuss each of the alleged contradictions of this principle appearing in the above quotation.

3. As measures for bringing about an orderly increase in our imports discuss: (a) the substitution of subsidies for tariff protection; (b) the indemnification of workers and investors injured by the increase of particular imports; (c) international agreements to prevent dumping and the exploitation of labor; (d) our "reciprocal trade agreements."

4. Explain the essential difference between the value and the cost principles of railway rate making.

5. (a) What is a marketing function? (b) Enumerate the marketing functions and define each. (c) Which marketing functions are most important? Why do you think so? (d) Which marketing functions are most expensive to perform? Why do you think so? (e) What may be said to be the total cost of transportation? Does this appear to be the most expensive of the various marketing functions? Is all transportation cost a part of marketing cost? Explain.

6. It has been said that "the automobile has changed life more than anything else since the railroad; and that the motor truck has apparently changed marketing more than any other single factor during the past 20 years." Do you believe that the changes in marketing methods brought about by the automobile and motor truck have increased or decreased marketing efficiency? Why?

7. (a) Why should the business man of today concern himself with territorial division of labor? (b) What is the relationship of form, place, ownership and time to the utility of goods? Where does transportation fit as an economic process? (c) What is meant by the term "distribution" by an economist? What do we call the distributive shares which go to land, labor, capital, and the entrepreneur? (d) Distinguish between an exchange economy and a supply economy; between an economic system and an economic region.

8. Explain the general characteristics necessary to make a tax sys-

(Continued on page 104)

People in Distribution

For our readers' convenience, items referring to one person only are arranged alphabetically according to the individuals' names. Company news or changes affecting more than one individual are arranged alphabetically by company names. Association items are similarly arranged.

George M. Bunker has been elected President of the Trailmobile Company, Cincinnati, Ohio. He is also Vice President in Charge of Manufacturing for The Kroger Company.

Christopher de Groot, general traffic manager of Pan American-Grace Airways (Panagra), was elected president of the Inter-American Safety Council.

William E. Dunkinson, former office manager for Greyvan Lines, Inc., has been appointed general sales manager for Federal Storage Warehouses, East Orange, N. J., and Eastern division sales manager representing North American Van Lines, Inc.

James R. Henderson, Union Pacific freight traffic agent at Chicago, was named foreign freight agent for the railroad at New York.

George B. Kiely has been appointed special traffic representative of Air Express International, New York.

Herman Liberman was appointed field engineer of Paisley Products, Inc. He will specialize in the firm's line of non-warp and flexible animal glues.

C. S. Macnair has joined the Acme Steel Company, Chicago, in the capacity of Consultant on Product Development.

Ray E. Markuson, publications editor, has been advanced to assistant advertising manager, Pontiac Motor division, General Motors Corp., Pontiac, Mich.

Edwin A. Olson has been appointed general traffic manager of Libby, McNeill & Libby, food canners, with headquarters in Chicago.

W. A. Radford was appointed New York representative for the A. H. Ross Company, Inc., Dayton, Ohio.

Cleemann Withers has been elected secretary of the Curtiss-Wright Corp. and its subsidiaries.

American Airlines has named **Robert W. Knight** director. **I. C. McInnis** has been appointed assistant director of a newly created Safety Division.

Bemis Bro. Bag Co. has announced the election of **Howard P. Claussen** as a member of the Board of Directors. **Charles W. Loomis** was appointed a vice president. In addition, **Howard L. Bayne** succeeds **C. F. Scott** as Bemis Kansas City plant manager and **Philip Miller, Jr.**, succeeds **E. A. Johnson** as Traffic Manager at Brooklyn.

announced the following elections of officers: president, **A. F. Anjeskey**; vice president, **Wilbur Mayer**, and secretary-treasurer, **E. Donald Tolles**.

Textile Bag Manufacturers' Association has announced the election of **Homer V. Howes**, vice president of Bemis Bro. Bag Co., as president. He succeeds **Francis H. Ludington**, president of Chase Bag Co.

The Society of Industry Packaging and Materials Handling Engineers has elected **W. Gordon Bennett**, Anaconda Copper Mining Co., as president.

The Traffic Club of Philadelphia has announced the election of **Robert Maguire** as president. He is manager of the traffic division of the Atlantic Refining Co., Philadelphia.

Wirebound Box Manufacturers Association has re-elected **D. R. Simmons**, Elberta Crate and Box Co., Bainbridge, Ga., as president.

Colonel Merle J. Reynolds has been appointed director of the Office of Transport and Storage division of the National Security Resources Board, and of **Dr. Richard H. Rush** as consultant on air transportation, airports and fixed-base operations. Both will serve under the supervision of **Captain Granville Conway**, Director of Transport and Storage.

DISTRIBUTION BRIEFS

John Colligan, president and **Charles Smith**, secretary-treasurer, have purchased the Middlesex Transportation Co. in New Brunswick, N. J.

Homer W. Fitterling, South Bend, Ind., has purchased the Lake Motor Freight Lines, Inc., Port Clinton, Ohio, from Oliver True and True family interests, and will transfer the home office of the firm to South Bend. (Kline)

Robert Gair Company, Inc., announced the purchase of the business and properties of **M. S. Dowd Carton Company**, Groton, Conn.

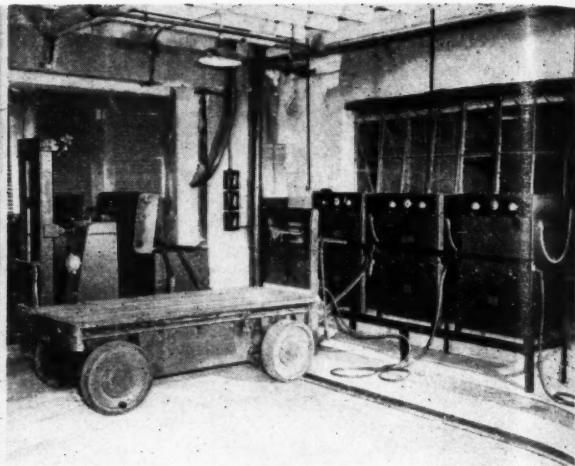
Lee Brothers Storage, Inc., have leased their warehouse at Riverside Drive and 134th St., New York, to the Neptune Storage Co., on a long term basis. Lee Brothers retain ownership of the building.

The McNeil Machine & Engineering Company of Akron, Ohio, has purchased the Cleveland Crane & Engineering Co., Wickliffe, Ohio. Plans have been made to continue operating Cleveland Crane as heretofore, with no changes in over-all management, organization or policies.

United Freight Forwarders has been formed in New York under the direction of **H. W. Chapman**, formerly traffic manager of Metal Traders, Inc.

Voltz Bros., Inc., has announced the purchase of Brown Aluminum Trailers, Inc., Chicago branch. All sales and service of the company's units in the Chicago area will be handled by the new distributor.

West Coast Fast Freight Lines, Los Angeles, has purchased the Spokane Pacific Lines, prominent northwest trucking concern. The transaction will involve nearly \$650,000.



Left: Fork truck removes pallet load of 16 bags of starch from small flat body truck in loading-unloading yard. Right: This charging station is equipped to handle four or more battery-powered units at one time. Section of angle iron bolted to floor provides checks for truck wheels.

SAVING THROUGH REORGANIZATION

Heavy demand for a group of products led to the overhauling of materials handling and warehousing procedures and equipment. By using conveyors and lift trucks in addition to fixed platform trucks, this company made significant savings in its costs.

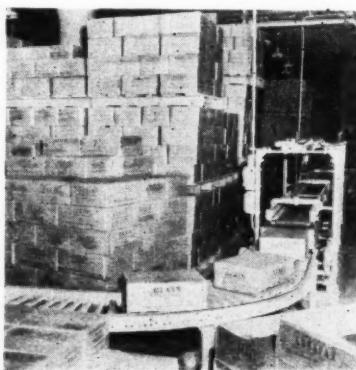
THIS case history involves the materials handling techniques of a Tuckahoe, New York, industrial concern. Prior to 1946, this plant, which manufactures medical and pharmaceutical products, used skids and fixed platform industrial trucks. They had found these devices satisfactory, but were anxious to reduce handling and storing costs still further because of the current trend in material and labor costs. It was their feeling that, in view of the fact that "eighty percent of unskilled labor in any industry is used to move things," a considerable effort was advisable in the materials handling realm to cut expenditures still further. A further important factor was the increase in business which this company was facing.

The first step taken was to handle larger amounts of material in one operation, in the form of a unit-load system. This facilitated vertical rather than horizontal storage, an important consideration in view of reluctance to enter into new warehousing construction, or additional space leasing. The com-

pany found that the fork truck-pallet-unit load system thus offered several advantages.

The next step was to design a winged pallet with available storage space in mind. Another consideration in determining the standard size of the pallet was the size of the cartons containing the cans shipped to them by their supplier. These considerations determined the size of the pallet, which was double-faced and measured 43 by 48 inches. These pallets were

The various items travel on roller conveyors to the gluing and sealing machines.



also designed to handle unit loads of starch and other products, many of which were received in sacks.

Formerly, each bag of starch was handled manually on to trucks and, at destination, also manually handled. Skid-loads were moved into storage by hand truck. Now the starch is palletized into 16 bag units on receipt; when needed for manufacturing purposes, it is removed from storage by fork truck, placed on flat bottom over-the-road trucks and thus moved to the plant. Receipt of cartons from the supplier is also facilitated.

Present equipment includes several fixed-platform trucks for the handling of unpalletized items between the various plant buildings, as well as conveyors which carry filled cartons to central gluing and sealing machines. The sealed goods are palletized and moved by the battery trucks to temporary storage. For less than pallet load orders, a floor area near the shipping department was set aside, and called the Small Order Section. This cut down travel time for clerks and facilitated filling of small orders.

Public Warehouse Section

Warehousing is an integral part of distribution in several ways. Public warehouses are not merely depositories for the safeguarding of personal effects or industrial commodities; many are equipped to perform a wide range of services in addition to storage. Among these services are:

Bottling, boxing, financing, fumigating, grading, handling, hauling, labeling, motor transportation, moth-proofing, moving, operation of public truck scales, quick-

freeze facilities, rental of space for manufacturing, offices and showrooms, rigging, sales representation, sample distribution, sorting, stevedoring and various other functions for efficient and economical distribution.

This special advertising section of public warehousing has been consolidated for ready reference and maximum utility. It includes merchandise, refrigerated, household goods and field warehouses. For shippers' convenience, states, cities and firms have been arranged alphabetically.

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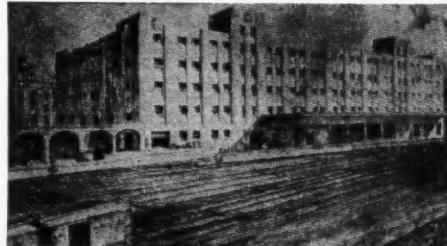
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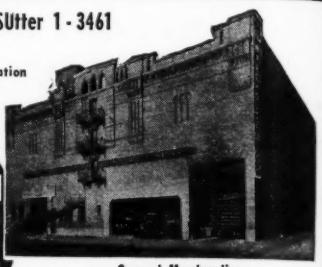


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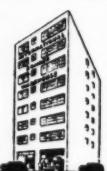
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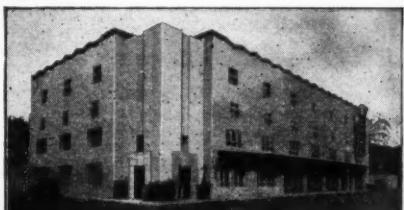
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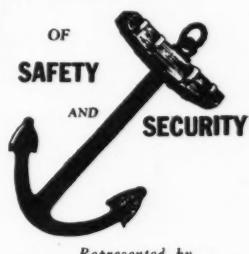


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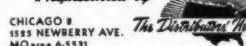
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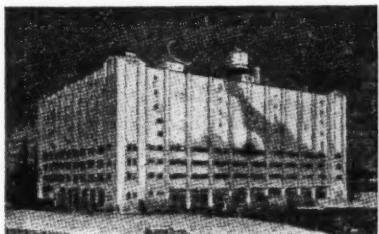
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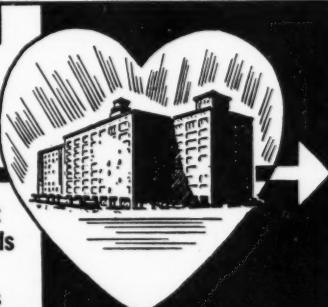
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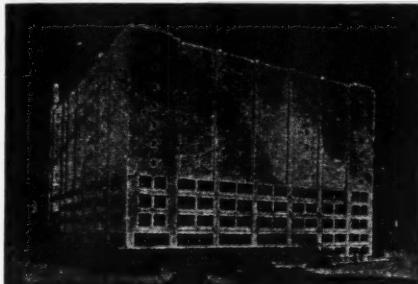
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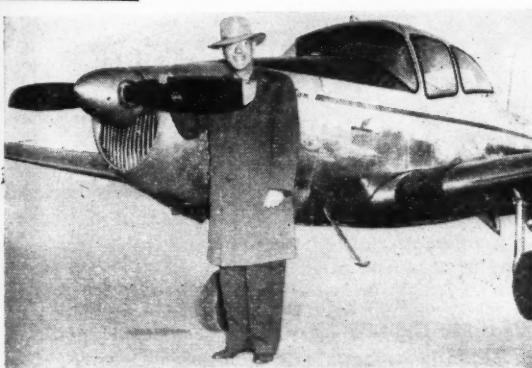
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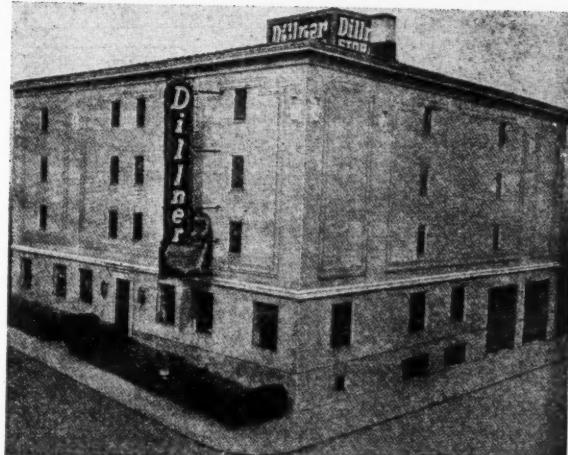
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A.D.T. Burglar and Sprinkler Supervisory Service. Illinois Central, Frisco & Mo. Pac. Private rail siding 9 car spot.

MEMPHIS, TENN.

W. H. DEARING, President

POSTON WAREHOUSES, INC.

ESTABLISHED 1894

671 to 679 South Main St., Memphis 2

Insurance Rate \$1.20 per \$1,000 per Annum Distribution a Specialty
Merchandise storage, dependable service, free switching. Local cartage
delivery. Illinois Central and Cotton Belt Railway tracks. Automatic
sprinkler. A.D.T. watchmen.

MEMPHIS, TENN.

H. K. HOUSTON, Pres. P. D. HOUSTON, V.P.

UNITED WAREHOUSE & TERMINAL CORP. S. A. Godman, G. M.

Warehouse No. 1

137 E Calhoun Ave.

Warehouse No. 2

138-40 St. Paul Ave.

MEMPHIS, TENNESSEE

Storage (Mdse.)—Pool Car Distribution—Local delivery service—Office
Space. In the heart of the wholesale district and convenient to Rail,
Truck and Express terminals. Eight car railroad siding—(N.C. & S.L. and
L.N.Y.)—Reciprocal switching A.D.T. Service. Represented by Distribution
Service, Inc. Member of A.W.A. and M.W.A.

Cities
and Firms are Arranged Alphabetically

NASHVILLE, TENN.

Reliable Service Since 1903

BOND, CHADWELL CO.

MERCHANDISE WAREHOUSING

Distribution and Trucking

Heavy Machinery Moving

Household Goods Storage and Moving

When Needing Merchandise Storage in Nashville Call New York Office Plaza 3-1234, Chicago Office Harrison 3688 or Nashville 5-2738.

Members of

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NASHVILLE, TENN.

521 Eighth Ave., So., Nashville 2

Central Van & Storage Co.

MERCANTILE AND HOUSEHOLD STORAGE
WAREHOUSE STOCK and POOL CAR DISTRIBUTION

Automatic Sprinkler System—Centrally Located

NASHVILLE, TENN.

Nashville Warehousing Co.

P.O. Box 555, Nashville 2

GENERAL STORAGE
POOL CAR DISTRIBUTION
FREE SWITCHING—CITY TRUCKING

AMARILLO, TEXAS

W.M. C. BOYCE

J. A. RUSH

ARMSTRONG TRANSFER & STORAGE CO., INC.

103 SOUTH PIERCE STREET

Merchandise Storage & Distribution
Household Goods Storage, Moving & Packing
Long Distance Operators

Member: A.W.A.-A.C.W.-N.F.W.A.-S.W.T.A.-T.M.T.
Agents—Allied Van Lines



BEAUMONT, TEXAS

TEXAS STORAGE COMPANY

656 NECHES STREET

BEAUMONT, TEXAS

Merchandise and Household Goods
Warehouse, Concrete Construction
30,000 Sq. Ft. Distribution of Pool Cars
Transfer Household Goods
Agent for A.V.L. Member of N.F.W.A.—S.W.T.A.



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CORPUS CHRISTI WAREHOUSE AND STORAGE COMPANY

Located at PORT SITE

adjacent to docks NAVIGATION DISTRICT No. 1

Distribution

Drayage

MERCHANDISE EXCLUSIVELY

150,000 Sq. Ft. Springled Low Insurance Rates

Member: Southwest Warehouse and Transfermen's Assn.

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Pool Car Distribution Specialists

also Warehousing and Industrial Hauling.
Terminals Centrally Located in both Dallas and Fort Worth
General Office—204 No. Good St. 1, Dallas, Texas
Phone Riverside 1734

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A. G. Donovan, Gen. Mgr.

R. B. Williamson, Secy. and Treas.

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since 1875

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Modern Fireproof Construction—Office Displays,
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& Transfermen's Assn., Rotary Club.

Operating Lone Star Package Car Co. (Dallas-Ft. Worth
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Inc., Agent.

Dallas Transfer
TERMINAL WAREHOUSE CO.
2ND UNIT SANTA FE BUILDING

DALLAS, TEXAS

INTERSTATE - TRINITY WAREHOUSE COMPANY

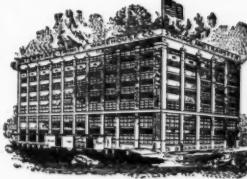
301 North Market St., Dallas 2

Merchandise Storage and
Distribution

Household Goods Storage
Moving & Packing
Long Distance Hauling

R. E. ABERNATHY, Pres.
J. A. METZGER, Vice-Pres.

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"Bankers of Merchandise" "Service With Security"

International Warehouse Co., Inc.

1601 Magoffin Ave. Inc. in 1920 El Paso, Texas

Lowest Content Insurance Rate
Fireproof Storage of Household Goods, Autos & Merchandise.
State and Customs Bonded. Private Trackage—T. & P.
and So. Pac. Rys. Pool Car Distribution—Motor Truck Service.
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FORT WORTH, TEXAS

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MERCHANDISE STORING—POOL CAR DISTRIBUTION
Our modern Centrally located warehouse is completely equipped to serve
you with over 200,000 sq. ft. of merchandise and household storage space.

MOVING—STORAGE—PACKING—SHIPPING



Since

1875

Since

1875

BINYON-O'KEEFE
STORAGE CO.

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Storage, Cartage, Pool Car Distribution



O. K. Warehouse Co., Inc.



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Agents, North American Van Lines, Inc.

HOUSTON, TEXAS

Member of A.W.A.—S.W.T.A.

BUFFALO WAREHOUSE COMPANY

No. 1 MAIN STREET HOUSTON 2, TEXAS

Located in the heart of the jobbing district

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION

Lowest Insurance Rates

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Watchman

For Shippers' Convenience, States, Cities

HOUSTON, TEXAS

New Location - Improved Facilities

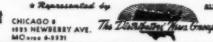
BETTER WAREHOUSING IN HOUSTON

Our new warehouse is 800 feet long by 250 feet wide with car spot on the Mo. Pac. R. R. for 20 cars at one time. Plenty of truck dock space with wide area to maneuver trucks and trailers.

This modern one-story property with high ceilings and unlimited floor load capacity is fully equipped with modern materials handling apparatus.

HOUSTON CENTRAL WAREHOUSE and COLD STORAGE CO.

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MCNALLY 8-3231

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NEW YORK 18
51 WEST 44TH ST.
PEABODY 6-4474

HOUSTON, TEXAS

Houston Terminal Warehouse & Cold Storage Company

701 No. SAN JACINTO ST., HOUSTON 2

General Storage Cold Storage U. S. Custom Bonded
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Office Space Display Space Parking Space

Lowest Insurance Rate

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Chicago Representative
Phone Harrison 3688

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Merchandise and Household Goods Storage
Pool Car Distribution

Sprinklered—A.D.T. Watchmen
Ships and Uptown Warehouses
Operators—Houston Division
Lone Star Package Car Co.
Member of N.F.W.A.—State and Local Assn's.

HOUSTON, TEXAS

W. E. FAIN, FOUNDER
W. T. FAIN, MANAGER

TEXAS WAREHOUSE COMPANY

Established 1901

Forty-Eight Years

Under Same Continuous Management
MERCHANDISE EXCLUSIVELY

Pool Car Distribution Sprinklered Throughout
A.D.T. Supervised Service

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UNION Transfer & Storage Co.

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Forwarding and Distributing

MERCHANDISE STORAGE

Warehouses Sprinklered Throughout

Supervised by A. D. T. Service.

SERVICE THAT COUNTS

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UNIVERSAL TERMINAL WAREHOUSE CO.

1002-1008 Washington Ave., Houston

Merchandise Storage—Pool Car Distribution—Drayage Service
A.D.T. Central Station Automatic Supervisory
Sprinkler, Waterflow, and Fire Alarm Service
Watchmen, U. S. Customs Bonded, Office Space
Represented in all principal cities by
UNIVERSAL CARLOADING & DISTRIBUTING COMPANY
Division of
UNITED STATES FREIGHT CO.
Members State and Local Associations

HOUSTON, TEXAS

BENJ. S. HURWITZ, Pres.

WESTHEIMER Transfer and Storage Co., Inc.

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Since 1883

Merchandise & Household Goods Storage—Pool Car Distribution
Lift Van Service—20 car lengths of trackage.
Fireproof Warehouses—A.D.T. Automatic Fire and Burglary Protection
Agent for Allied Van Lines, Inc.

Members N.F.W.A.
State and Local Assn.

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MERCHANTS Household Goods TRANSFER & STORAGE CO.

Merchants & Transfer Sts., San Antonio 6

Complete Storage and Distribution Service

Over 50 years of satisfactory service

Member of A.W.A.—N.F.W.A.—S.W.A.

SAN ANTONIO, TEXAS

Agent for Allied Van Lines, Inc.

Scobey Fireproof Storage Co.

311-339 North Medina St., San Antonio 7

HOUSEHOLD — MER-
CHANDISE — COLD
STORAGE — CARTAGE
DISTRIBUTION

INSURANCE RATE -- 10c

Member of 4 Leading Associations



ALIED DISTRIBUTION INC.



SAN ANTONIO, TEXAS

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P. O. BOX 4097, STA. A, SAN ANTONIO 7

Specialists in Merchandise Distribution

FIREPROOF CONSTRUCTION BONDED STORAGE

Represented by The Liberty Van Group
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CHICAGO 4
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MCNALLY 8-3231

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HILDEBRAND WAREHOUSE COMPANY

Bonded under the Laws of Texas

General Storage and Distribution from the Center of
East Texas. Specializing in Pool Car Distribution
and Merchandise Warehousing

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POOL CAR DISTRIBUTION

Since 1920

TARRY WAREHOUSE & STORAGE CO.

Wichita Falls, Texas

Members: SW&TA—NFWA—AVL

OGDEN, UTAH

MEMBER OF A.W.A.

WESTERN GATEWAY STORAGE CO.

GENERAL WAREHOUSING

POOL CAR DISTRIBUTION

MERCHANDISE AND COLD STORAGE

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CENTRAL WAREHOUSE

520 West 2nd South St., Salt Lake City 1

Fireproof

Sprinklered

Merchandise Storage

Pool Car Distribution

Office Facilities

Member A. W. A.

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Merchandise Storage and Distribution

Over 1,000,000 cubic feet reinforced Concrete Sprinklered Space

Insurance Rate 11 Cents

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353 W. 2d South St., Salt Lake City 1

Represented by

ALLIED DISTRIBUTION, INC., and

DISTRIBUTION SERVICE, INC.

New York-Chicago-San Francisco

SALT LAKE CITY, UTAH

Merchandise Storage—Pool Car Distribution

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Established 1910

72,000 sq. ft. space. Reinforced concrete

and brick. Central location. Systematic

delivery service. A. D. T. automatic

burglar and fire protection. Office and

desk space. Member-AWA-UFL-UWA-AWI



Cities
and Firms are Arranged Alphabetically

SALT LAKE CITY, UTAH

"Serving the Intermountain West"

SECURITY STORAGE & COMMISSION CO. Inc.
230 So. 4th West St., Salt Lake City (1)
Warehousing-Distribution service since 1906
Represented by American Chain of Warehouses
New York (17) Chicago (4)
250 Park Avenue 53 W. Jackson Blvd.
Member of American Warehousemen's Association

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Household • Automobile Storage • Merchandise
NEW-BELL STORAGE CORPORATION
22nd St. & Monticello Ave.
NORFOLK 10, VIRGINIA
MODERN SPRINKLER EQUIPPED WAREHOUSE
50,000 SQUARE FEET PRIVATE RAIL SIDING
Lowest Insurance Rate in Norfolk. Pool Car Distribution
WE SPECIALIZE IN MERCHANDISE STORAGE
AND DISTRIBUTION
AGENTS AERO MAYFLOWER TRANSIT COMPANY
Member M.W.A. & A.T.A.

NORFOLK, VA.

**STORE and DISTRIBUTE
IN THE PROSPEROUS TIDEWATER
AREA THRU PRUDENTIAL**
HOUSEHOLD GOODS MOVED, PACKED, SHIPPED
POOL CAR TRANSFER TRUCKING SERVICE
LARGE FIREPROOF WAREHOUSE
OPEN YARD STORAGE AVAILABLE
LOCATED ON N. & W. SIDING

**PRUDENTIAL STORAGE and
WAREHOUSE COMPANY**
Bilings St. at N. & W. Ry.
P. O. Drawer 1859 — Telephone 22481 or 54008

NORFOLK, VA.

Fine Warehousing Since 1914

Security Storage and Van Co.
500-530 FRONT STREET
COLLECTIONS • POOL CARS • DISTRIBUTION
MOTOR VAN AND LIFT VAN SERVICE
Member—Nat'l. F.W.A.—Allied Van Lines

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Established 1892

**SOUTHGATE
STORAGE COMPANY, Inc.**

239 Tazewell St., Norfolk 10



For economical storage and distribution you will want to know more about our individualized services. Our fireproof warehouses are in the Southgate Terminal, on the waterfront and in the center of Norfolk's wholesale district. Served by all rail, water and motor lines.

Write for Booklets—"7 POINT DISTRIBUTION"

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71 Years of Uninterrupted and Expert Service

BROOKS TRANSFER and STORAGE CO., Inc.
1224 W. Broad Street, Richmond 3, Va.
Three Fireproof Storage Warehouses—810,000 Cubic Feet Storage Space—
Automatic Sprinkler System—Low Insurance Rates—Careful Attention
to Storage—Packing and Shipping of Household Goods—Private Rail-
road Siding—Pool Car Distribution—Motor Van Service to All States—
Freight Truck Line. Member of N.F.W.A.—A.W.A.
Agents: United Van Lines, Inc. serving 48 States and Canada.

RICHMOND, VA.

Established 1908

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CORPORATION**

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160,000 SQ. FT.
SPACE
BUILDINGS
SPRINKLERED
U. S. BONDED
& PUBLIC
WAREHOUSES
MERCHANDISE
STORAGE &
DISTRIBUTION
INSURANCE
RATES
20c PER \$100
PER YEAR



ROANOKE, VA.

H. L. LAWSON & SON



**Finance and Storage
Pool Car Distributors
General Merchandise Storage**
**421-25 EAST CAMPBELL AVE.
ROANOKE 7, VIRGINIA**

Represented by
Associated Warehouses, Inc., Chicago and New York

ROANOKE, VA.

ROANOKE PUBLIC WAREHOUSE

369 W. Salem Ave., W., Roanoke 5

Capacity 500 Cars

Private Railroad Siding

Automatic Sprinkler

Accurate Accounting

We make a specialty of Storage and Pool Car Distribution
for Agents, Brokers and General Merchandise Houses.
Member of American Chain of Warehouses

SEATTLE, WASH.

EYRES TRANSFER & WAREHOUSE CO.

2203 First Ave., So., Seattle 4

Cartage — Distribution — Storage
Highest financial rating: new fireproof; A.D.T. sprinklered
buildings; lowest insurance rate (10.2c); modern equipment.

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LLOYD
Transfer Co. Inc.

**POOL CAR DISTRIBUTION
MACHINERY MOVING, RIGGING AND HAULING**
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J. R. GOODFELLOW, Pres.

OLYMPIC WAREHOUSE & COLD STORAGE CO.

MERCHANDISE STORAGE & DISTRIBUTION
1203 Western Avenue Seattle 1, Wash.
Cold Storage—Dry Storage—Rentals—Pool Car Distribution—Office Rentals
Fireproof, brick const.; Sprinkler system; Insurance rate: 12.8c. Siding
connects with all rail lines.

Bonded U. S. Customs; State License No. 2
Member of A.W.A. (C.S.) Wash. State Whsmns. Assn.

SEATTLE, WASH.

Seattle's One-Stop Warehousing Service!



UNITED

Merchandise Storage & Distri-

bution—U. S. Customs—See Stores • Seattle's Exclusive Furniture Repository

SEATTLE TERMINALS, Inc.

Executive Offices: 1017 E. 40th St., Seattle 5

R. G. Culbertson, President

Wm. T. Laube, Jr., Secretary

SEATTLE, WASH.

Lloyd X. Coder, Pres. Ellis L. Coder, Secy.-Treas.

SYSTEM Transfer & Storage Co.

Established 1919

2601-11 Second Avenue, Seattle 1
**Complete Drayage, Storage and
 Distribution Service**
 "System Service Satisfies"
 Member—A.W.A.—W.S.W.A.—S.T.O.A.

SEATTLE, WASH.

**TAYLOR-EDWARDS
 WAREHOUSE & TRANSFER CO., INC.**
 1020 Fourth Avenue South Seattle 4
WAREHOUSING • DISTRIBUTION • TRUCKING
 Represented By
 DISTRIBUTION SERVICE, INC.
 New York—Chicago—San Francisco

SPOKANE, WASH.

P. C. HINTON, Owner

RIVERSIDE WAREHOUSES, INC.

E. 41 Gray Avenue, Spokane, 8
 Telephone, Office and Stenographic Service
 Specialize in serving food and related industries; pool car distribution; 44 truck and
 tractors with semi-trailers. New 40,000 ft. modern warehouse, equipped with fork lift
 tractors.
 * Represented by
 CHICAGO 8
 1555 NEWBERRY AVE.
 MO 4-6371

ALLIED DISTRIBUTION INC.

SPOKANE, WASH.

**TAYLOR-EDWARDS
 WAREHOUSE & TRANSFER CO., INC.**
 310 W. Pacific Avenue Spokane 8
WAREHOUSING • DISTRIBUTION • TRUCKING
 Represented By
 DISTRIBUTION SERVICE, INC.
 New York—Chicago—San Francisco

TACOMA, WASH.

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 WAREHOUSE & TRANSFER CO., INC.**
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WAREHOUSING • DISTRIBUTION • TRUCKING
 Represented By
 DISTRIBUTION SERVICE, INC.
 New York—Chicago—San Francisco

HUNTINGTON, W. VA.

Every facility for you and your patrons' convenience to secure your share of this Five Hundred Million Dollar market is available through

THE W. J. MAIER STORAGE COMPANY
 1100 Second Ave., Huntington 10

GREEN BAY, WIS.

ESTABLISHED 1903

LEICHT TRANSFER & STORAGE CO.

123 S.O. BROADWAY • GREEN BAY • WIS.

Merchandise Storage
 Pool Car Distribution
 Transit Storage
 Household Goods Storage
 Heated—Unheated—Yard
 Storage
 Waterfront Facilities
 Stevedore Services

U. S. Customs, State and
 Public Bonded
 40 Car Track Capacity
 Modern Handling Equipment
 Private Siding on C&NW,
 CMS&P, GB&W Lines
 Reciprocal Switching all
 lines

Complete local and over-the-road truck services with 70 units of all types of equipment, including low-bed trailers, winches and cranes.



AERO-MAYFLOWER MOVING AND STORAGE
 New York Office:
 Interlake Terminals, Inc., 271 Madison Ave. (16)

ASTT

(Continued from page 72)

tem just. (a) Can a sharp distinction be drawn between "ability to pay" and "benefit received"? Explain. (b) Can it be known whether a shiftable tax conforms with the ability principle? Explain the nature of the problem. (c) With respect to justice, compare proportional taxation, progressive taxation and regressive taxation.

EXAMINATION No. 4**Interstate Commerce Law and Regulation**

1. The North and South Railroad and the East and West Railway perform terminal switching services at Aville. The latter railroad receives from and delivers to industries which are served directly by the former railroad, and absorbs the switching charges of the former railroad. Discuss the obligations of North and South Railroad and of the East and West Railway in supplying the industries located on the line of the North and South Railroad, and those connected with the

tracks of the East and West Railway.

2. Under which specific Part of the Interstate Commerce Act, if any, are the following types of transportation carriers or services engaged in interstate commerce regulated:

(a) Railroads; (b) crude petroleum pipe lines; (c) refined petroleum products pipe lines; (d) natural gas pipe lines; (e) freight forwarders; (f) motor freight common carriers; (g) private freight car companies; (h) motor freight contract carriers; (i) store-door collection and delivery services performed by motor for railroad carriers.

3. (a) The American Manufacturing Company operates a plant at Beeville. This city is served by the Southeastern Railroad Company. What are the circumstances and conditions under which the Southeastern Railroad Company will be required to establish switch-track connections between its line and

the facilities of the American Manufacturing Company? (b) Under what conditions does the Interstate Commerce Commission have jurisdiction over applications for the establishment of switch connections between a railroad and an industry?

4. (a) What persons, natural or artificial, are subject to the penalty provisions of the Interstate Commerce Act? (b) How does the Interstate Commerce Commission police and punish offenders who knowingly and willfully disobey the lawful orders of the Commission or orders of the Interstate Commerce Commission?

5. Define and illustrate with an example: (a) unreasonable rates or charges; (b) unduly preferential rates, charges or services; (c) unreasonably prejudicial rates, services or charges; (d) discriminatory rates or charges; (e) unjust discrimination; (f) rebate; (g) illegal rate or charge; (h) unlawful rate or charge; (i) "long and short haul" clause violation; and (j) "aggregate of intermediates" clause violation.

(Continued on page 106)

Cities
and Firms are Arranged Alphabetically

MADISON, WIS.

LOW INSURANCE RATE

CENTRAL
STORAGE AND WAREHOUSE COMPANY

COLD STORAGE
DRY STORAGE
FREEZER STORAGE

612 W. Main St., Madison 3

MILWAUKEE, WIS.

"Store American" For Economical Efficient Complete Merchandise Warehousing
SPECIALISTS IN POOL CAR DISTRIBUTION
AMERICAN WAREHOUSE CO.
General Office 325 East Chicago St. Milw. Wisc. Ass'n House No. 2
Private Siding—Chicago & North Western Ry. 3rd Ward District
Wisc. Wisc. Ass'n 302 North Jackson St.

Service Minded



COMPLETE WAREHOUSING
AND DISTRIBUTION SERVICE
GENERAL AND U. S. CUSTOMS BONDED STORAGE



ATLAS STORAGE

DIVISION OF P & V-ATLAS INDUSTRIAL CENTER INC.
647 W. VIRGINIA ST. MILWAUKEE 1, WIS.

W
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SLARGEST AND MOST MODERN

MILWAUKEE, WIS.

LINCOLN

WAREHOUSE COMPANY
MERCHANTISE WAREHOUSING
AND DISTRIBUTION

LOCATED IN HEART OF BUSINESS DISTRICT
Offices: 206 W. Highland Ave., Milwaukee 3
Member of A.W.A.—W.W.A.—M.W.A.

MILWAUKEE, WIS.

NATIONAL TERMINALS CORPORATION

954 So. Water Street, Milwaukee 4 Tel. Mitchell 5644
Milwaukee's most modern and best located Waterfront Warehouse.
Automobile storage. Warehousing on unit basis for spot stocks. Storage
"in transit". Pool car distribution. Customs Bonded.

Member of A. W. A. & W. W. A.
New York Office: 55 W. 42nd St., Phone LACKSWANNA 4-0063, New York 18, N. Y.

MILWAUKEE, WIS.

"Milwaukee's Finest"

National Warehouse
Corporation
— STATE BONDED —

EVERY CONCEIVABLE WAREHOUSE &
DISTRIBUTION SERVICE AFFORDED

A.D.T. Service



468 E. Bruce St.
Milwaukee 4
C. & N.W.R.R. Siding



MILWAUKEE, WIS.

—Phone Marquette 7091

TERMINAL STORAGE CO.

100-112 W. Seetho St.
Milwaukee 4, Wisconsin

Cooler, Freezer and General Merchandising Storage
Deep Water Dock, Private Siding
on C.M.St.P. & P. R.R.

SHEBOYGAN, WIS.

SHEBOYGAN
WAREHOUSE & FORWARDING CO

A Merchants & Manufacturers Warehouse



11th and Illinois Ave. Sheboygan, Wis.
Member of A.W.A.—May. W.A.—Wis. W.A.



CANADA

TORONTO, ONT.

M. A. RAWLINSON, Pres. & Gen. Mgr.

M. RAWLINSON, Ltd.

Established 1885 610 Yonge St., Toronto 5, Can.
Seven Buildings to Meet All Requirements for Modern Storage
and Distribution
Customs Bonded. Pool Car Distribution. Household Goods
Moved, Packed, Shipped and Stored.
Members of CanWA—NFWA—BAIFR—FWRA—TC&W—ALLIED VAN LINES

MONTRÉAL, QUE.

St. LAWRENCE WAREHOUSE INC.

1-VAN HORNE AVENUE, MONTREAL, CANADA
200,000 SQ. FT. OF MODERN FIREPROOF SPACE LOCATED
IN THE EXACT CENTER OF THE CITY
OF MONTREAL
Canadian Customs Bond. Private Siding—8 Car
Capacity—Free Switching—All Railroad Connections
New York Representative: Frank J. Tully
277 Broadway, New York 7
Phone Worth 2-0428

MONTRÉAL, QUEBEC

Established 1908
W. G. KENWOOD,
Pres. & Man. Dir.

Westmount Transfer & Storage Ltd.
205 Olivier Ave., Westmount, P. Q.
LOCAL AND LONG DISTANCE MOVERS
Private Room System for Storage
CRATING, PACKING and SHIPPING
Charges Collected and Promptly Remitted
Member: N. F. W. A., Can. W. A.



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6. (a) State in your own words the substance of Rule of Rate Making of the Interstate Commerce Act as contained in Part I, Section 15 A; Part II, Section 216 (1); Part III, Section 307 (f); and Part IV, Section 406 (d). (b) How does it differ from the provisions of the Rule of Rate Making provided for by the Interstate Commerce Act, Section 15 A, as amended (1) by the Transportation Act, 1920, and (2) by the Emergency Railroad Transportation Act, 1933?

7. (a) Distinguish between and illustrate with examples a lawful allowance made by a carrier subject to the Interstate Commerce Act and a rebate, drawback special rate or other lawful device. (b) Under what circumstances and conditions does the Interstate Commerce Commission have jurisdiction over payments made by carriers to shippers, consignees or others for services or facilities furnished by these parties in connection with the performance of transportation services?

8. The Northeastern Railroad publishes a tariff naming a rate on wheat carloads from Jonesboro, Wisconsin, to Smithville, Tennessee, of 60c. per 100 pounds, carload minimum weight 60,000 pounds. (a) How must the rate be published, and filed? (b) A competitive shipper located at Brownstown, Wisconsin, objects to the rate alleging that it is unduly prejudicial and preferential. How may he proceed to register his complaint and obtain action? (c) Upon what grounds may he seek suspension of the rate? (d) For what period of time may it be suspended? (e) If after the period of suspension the decision with respect to the rate has not been reached, what is the status of the proposed and suspended rate?

9. Discuss the powers with respect to the routing of freight shipments which must move over joint through railroad rates of: (a) the shipper, (b) the consignee, (c) the owner of the goods, (d) the initial carrier, (e) intermediate connection carriers parties to through joint rates, (f) delivering carrier, (g) switching carrier at destination, and (h) the Interstate Commerce Commission.

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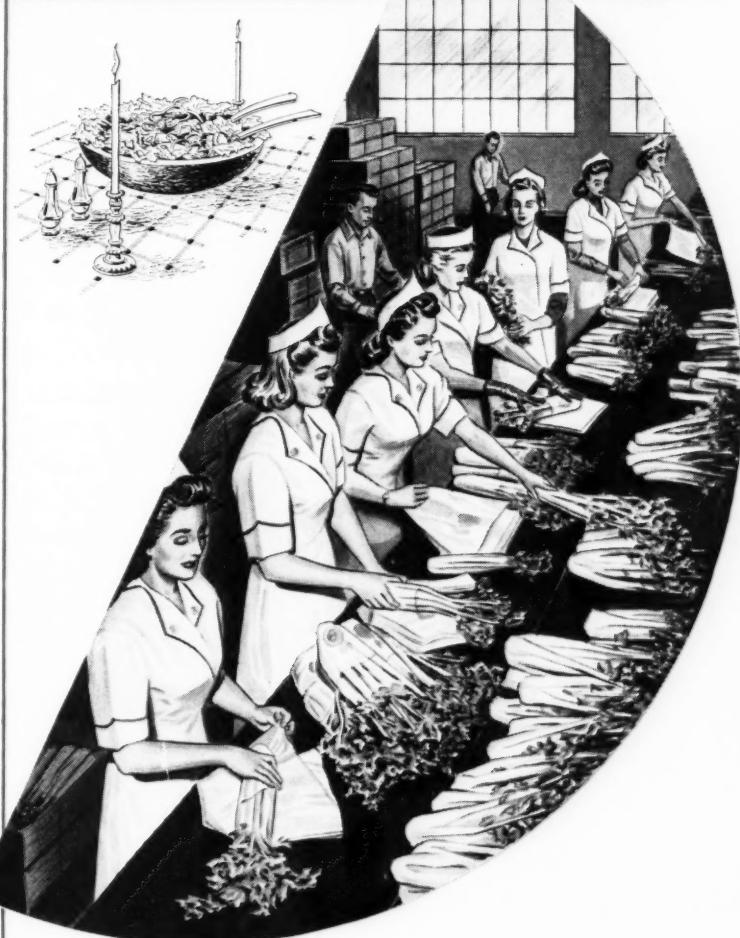
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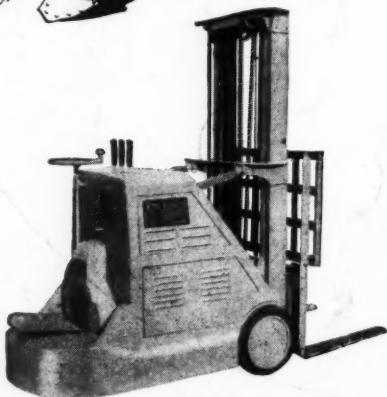


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